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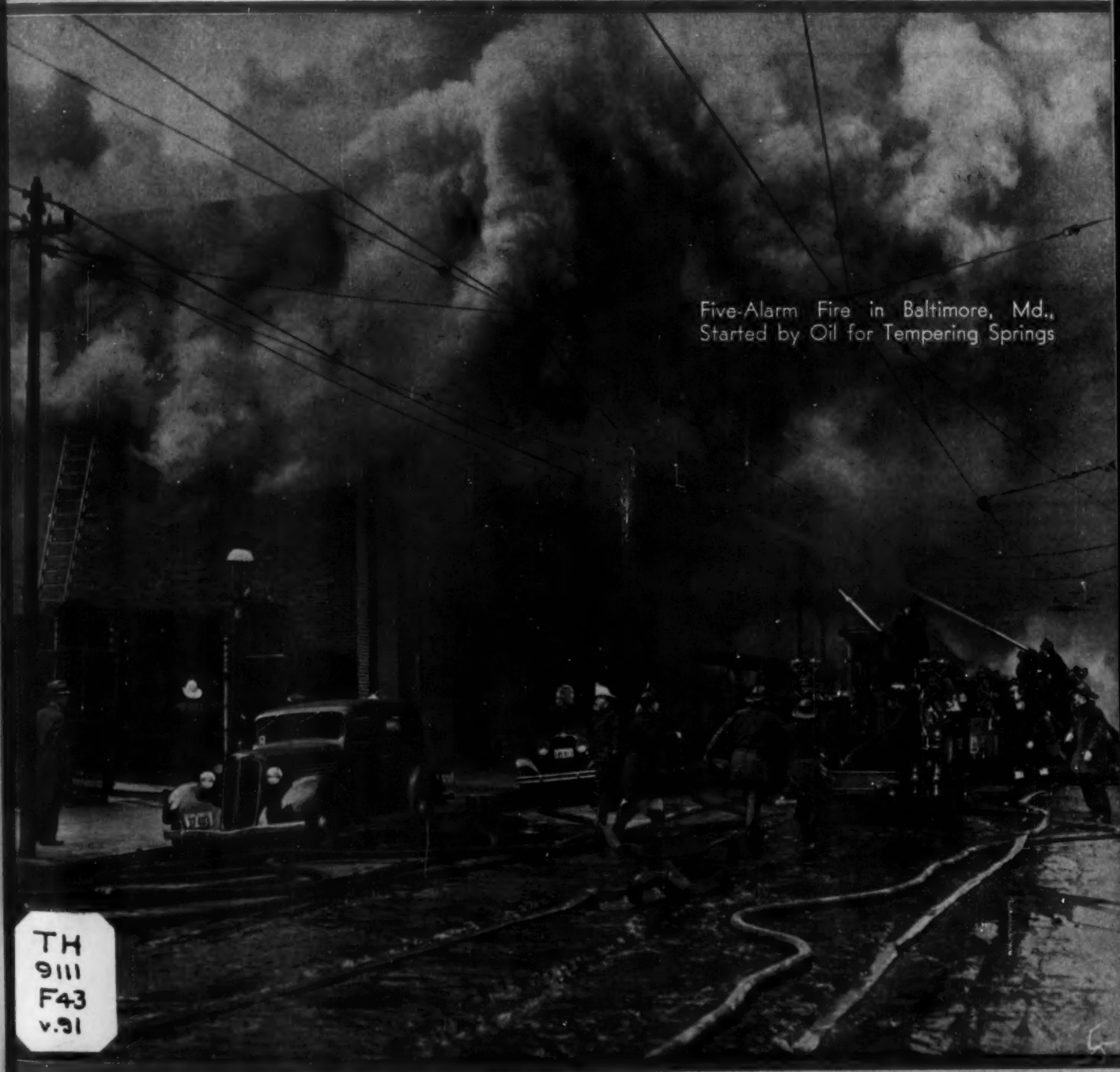
FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

91, No. 1 JANUARY, 1938 Member A.B.C.–A.B.P.



Five-Alarm Fire in Baltimore, Md., Started by Oil for Tempering Springs

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THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Whereas ROGER K. HAVENS, of Columbus, Ohio, assignor to THE SEAGRAVE CORPORATION, of Columbus, Ohio, a corporation of Ohio,

hath presented to the Commissioner of Patents a petition praying that the grant of Letters Patent for an alleged new and useful improvement in

LADDERS,

a description of which invention is contained in the specification of which a copy is hereunto annexed and made a part hereof, and complied with the various requirements of law in such cases made and provided, and

Whereas upon due examination made the said Claimant is adjudged to be justly entitled to a patent under the law.

Now therefore these Letters Patent are to grant unto the said

The Seagrave Corporation, its successors the assigns for the term of SEVENTEEN years from the date of this grant

the exclusive right to make use and vend the said invention throughout the United States and the Territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington this nineteenth day of October, in the year of our Lord one thousand nine hundred and thirty-seven, and of the Independence of the United States of America the one hundred and sixty-second.

Attest:

Law Examiner.

Commissioner of Patents.

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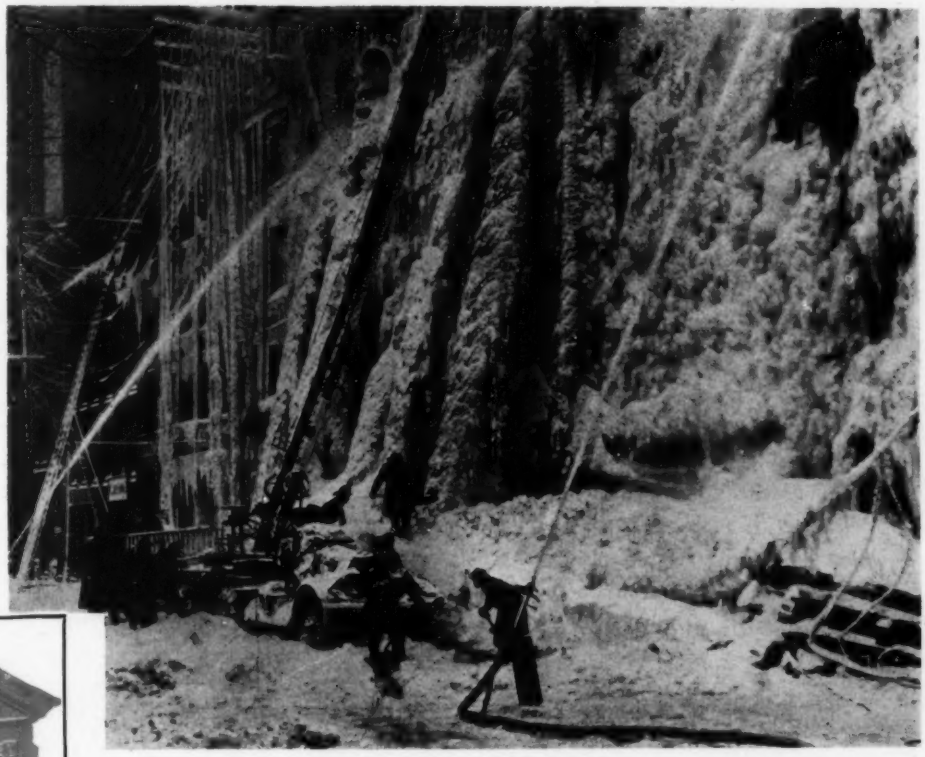

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"A Box a Block" in congested high value districts; not more than 500 feet to the nearest box in closely built residential districts; convenient to every group of buildings, manufacturing establishments, and institutions in sparsely built districts is generally a safe rule to follow.

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But what about the other side of the picture? Life, Property, Population, Wages and TAXES melting out of the community quicker than the ice shown above! Because some official or board decided to take a chance on the insufficient number of fire alarm boxes in their city. That's the "wonder" part of the picture!

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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

ROBERT H. LOCKWOOD
Associate Editor

FRED SHEPPERD
Editor

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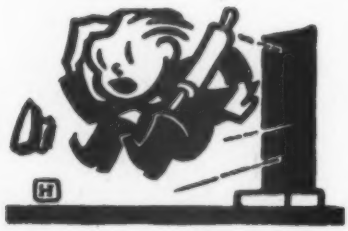

On the Move

"OUT with the old—in with the new" appears to be the slogan of the fire service for the new year, at least so far as fire-fighting equipment is concerned.

● Reports received from a representative group of cities throughout the country give good evidence that fire chiefs are starting 1938 with a stronger determination than ever to replace obsolete equipment, replenish hose supplies and add many needed minor appliances. Fire department budget requests for new equipment show an average increase of around 20% over 1937—and 1937 was by far a record year in this respect since the pre-depression period.

● Thus it looks like the new year will be a happy one for fire departments—and a prosperous one for the fire equipment makers. Let's hope it will be swell in every way for everybody.

The Publishers

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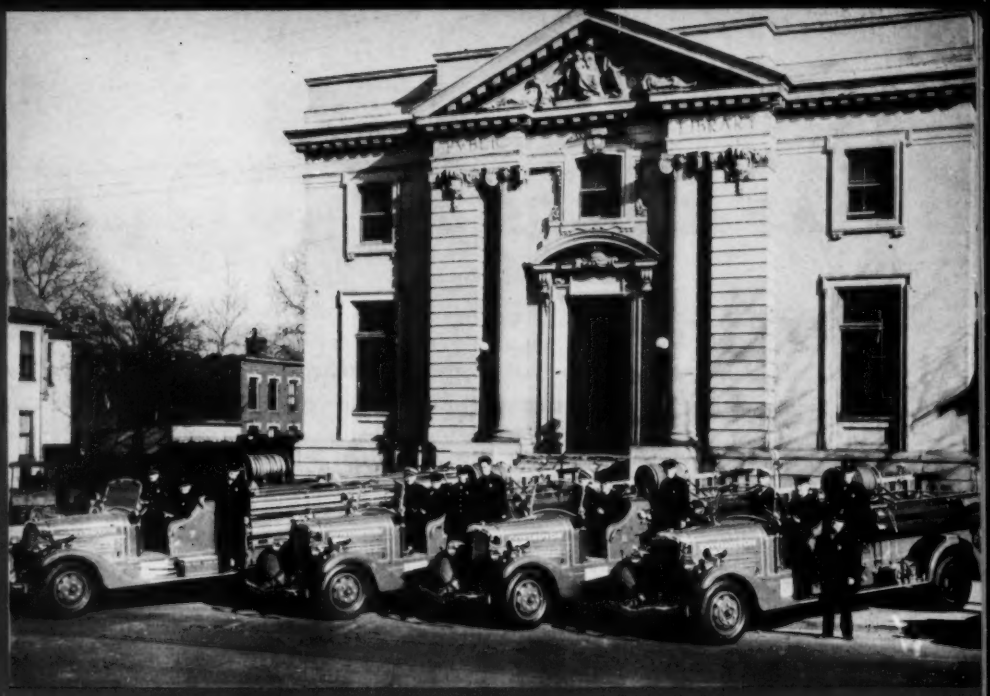
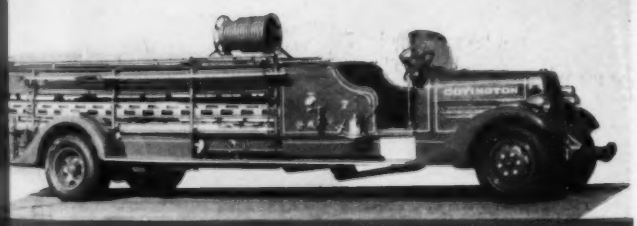
To COVINGTON, KY.



MODERNIZATION

Means NEW AHRENS-FOX EQUIPMENT



NO LADDER EXTENDS BEYOND BODY!
Even though this Ahrens-Fox Service Truck is equipped with a three section 50-foot ladder, all ladders are flush with the rear end of the apparatus.

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SINCE 1915, when the city of Covington, Kentucky, made its first purchase of two chemical and hose wagons, every piece of motor apparatus used by this enterprising and alert city has carried the Ahrens-Fox name plate.

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How can Ahrens-Fox serve you? Write us your problems, today.

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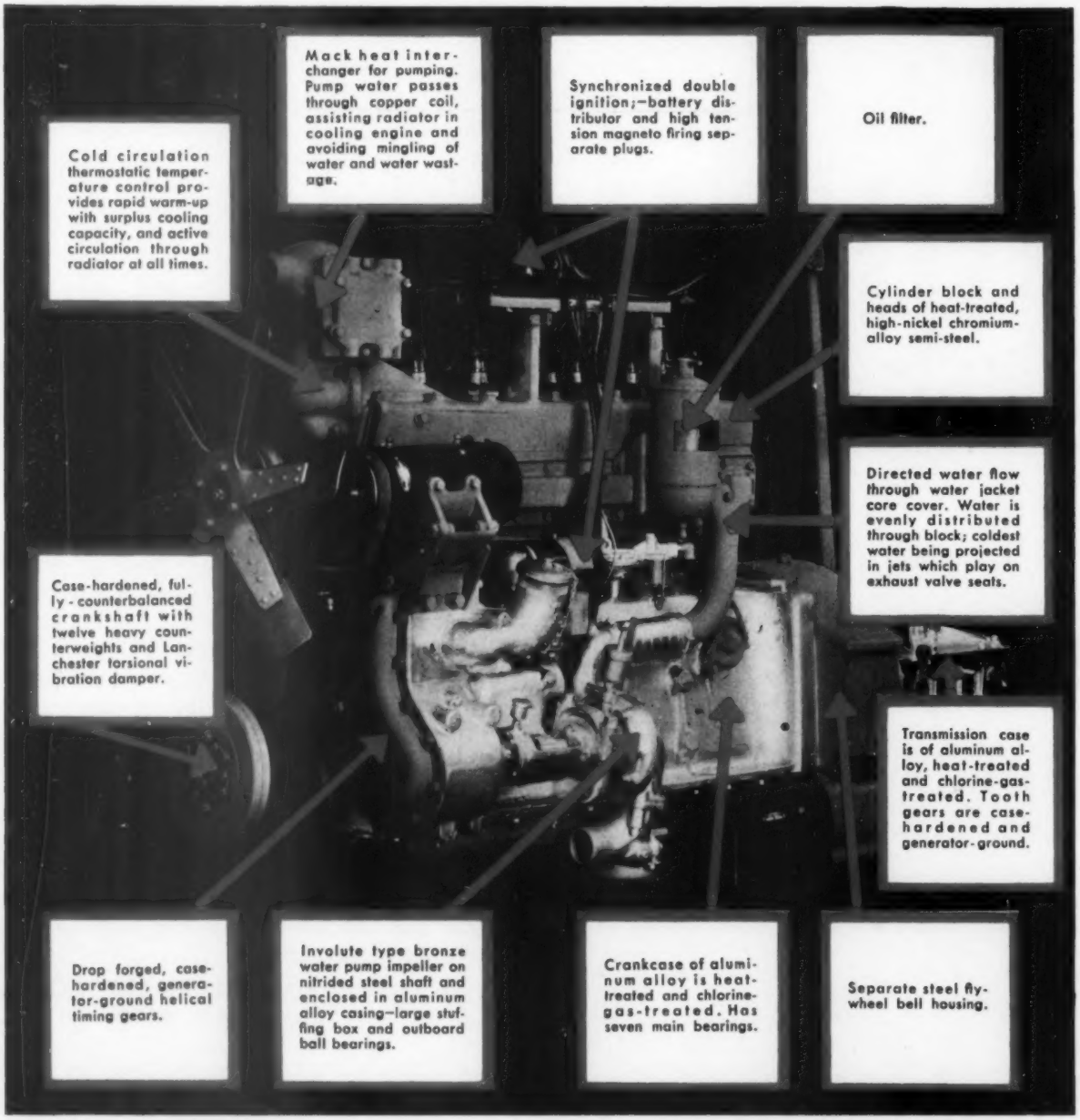
Mack-built engines for fire apparatus, plus the most efficient chassis and pumping units ever developed, provide the perfect fire-fighting combination. And these sturdy, six-cylinder powerplants have many exclusive features which assure greatest reliability, utmost durability and widest margins of safety. No wonder the leading fire departments everywhere rely on Mack!


Mack heat interchanger for pumping. Pump water passes through copper coil, assisting radiator in cooling engine and avoiding mingling of water and water wastage.
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Directed water flow through water jacket core cover. Water is evenly distributed through block; coldest water being projected in jets which play on exhaust valve seats.
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FIRE ENGINEERING

The Journal of the Fire Protection Profession

Volume 91 JANUARY, 1938 No. 1

With the Editor

Looking Back Over 1937 The year which has just ended gave plenty of evidence of the revitalization of the American fire service.

During that period greater progress was made in the adoption of new ideas in the service than during any other year in the past decade.

Closed body, or sedan type, trucks definitely established themselves in the fire-fighting field; power operated and metal aerial ladders were adopted by an increasing number of cities; centrifugal fire-fighting pumps continued their gains.

Of especial significance is the rapidly growing activity in replacing antiquated or undependable fire apparatus. New York City, for example has replaced, or has placed orders for fire apparatus to replace, nearly a hundred machines. Other cities have carried out replacement programs proportionally as great.

The adoption of lighting equipment for illuminating Fire Department operations at night continued at an accelerated rate. Salvage work by Fire Departments made further gains.

New equipment has further proved itself. For example, the fog nozzle rapidly found its way into Fire Departments large and small. Even public utilities are adopting it for use in fires in such electrical equipment as oil switches and transformers.

The fire alarm system is again coming in for its share of discussion. There has developed during the past year a real consciousness of the need of better fire alarm facilities. The growing use of dial phones, with the resulting delay in reporting emergencies, has given impetus to the central fire alarm system and better box distribution. "A box a block" is finding an echo in many cities today.

As far as Fire Department personnel is concerned, improved conditions of employment have been accomplished. One state has put into effect the three platoon system for Fire Departments in all first class cities, and New York City is now making the change-over from two to three platoons. Restoration of pre-depression salaries has been made in many municipalities, while others have been advanced to new highs.

All in all, the fire service is wide awake and is going places today.

Fred Sheppard

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Spending the Time Between Fires

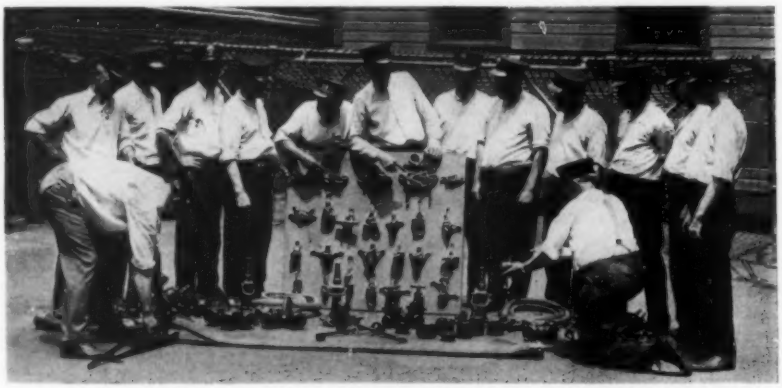
Many Useful Activities That the Members of the Fire Department May Engage In to Fill In Waiting Time

By ANTHONY J. MULLANY
Deputy Chief Fire Marshal, Chicago Fire Department

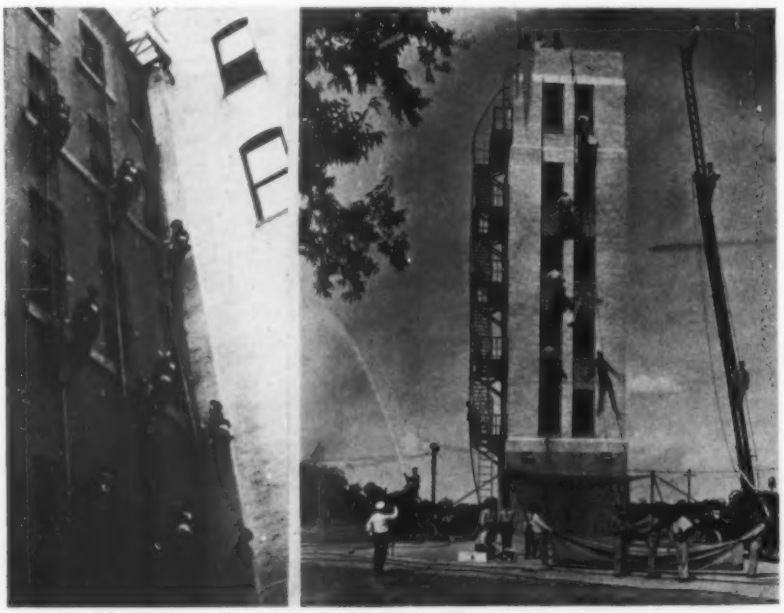
In this article, the author suggests the idea that leisure time of Fire Department officers and men should be spent in mutual improvement and in preparation for more useful service to the community of which they form a part and points out many things that can be done along these lines.

IT is common knowledge that Fire Departments are for the purpose of safe-guarding life and property from the ravages of fire. However, in our modern civilization there are many disasters other than fires where the Fire Department can be of great service to its citizens and to the community.

If it were possible for us to return to our communities one hundred years from now, I am sure we would be surprised to see the many other activities carried on by the Fire Department. We who are here today are giving our community greater service than did the paid Fire Departments of fifty; yes, even ten years ago. The question then arises, how can a Fire Department, taken either as a whole or as individuals, give even greater service to the citizens and taxpayers who, by taxation, maintain these departments?



Training—Instructions in Making Knots in Use of Tools and Equipment



Drills and Training—Use of Scaling Ladders and Other Evolutions on Building and Drill Tower

The most suitable time to provide for this greater service is between fire alarms.

Perhaps the first and most important of all activities between alarms of fire is that of drilling, executing and practicing evolutions which are now considered standard by the various Fire Departments throughout the country. These evolutions should include hose drills, fire extinguisher and hand pump drills, ladder raising and climbing, placing the pumper in service at hydrant, well, cistern, lake, pond or river. Extension drill in the proper use of the axe is of great value.

Definite Program of Evolutions Most Important

It is hardly necessary to state here that a definite program of evolutions and drills should be laid out. Time devoted to specific drills should depend upon their relative importance. The value of these drills cannot be over-estimated. Efficiency is increased, time and money saved, labor is lessened, accidents and fatalities avoided, group and individual confidence is promoted and increased and the life of apparatus and equipment is prolonged.

Ventilation and Building Construction Study

Special study should be made of the necessities and mistakes of all

types of ventilation, including cross ventilation, roof ventilation, basement ventilation and ventilation assisted by such mechanical devices as the smoke ejector and gas mask. In my mind, the study of ventilation is of utmost importance.

Another of the many ways in which a Fire Department can be improved and justify its cost to the taxpayer is to make a detailed practical and regular course of study in building construction. Let a study of frame construction be made for the purpose of familiarizing officers and men with the defects in this type. Causes of loss of life and injury, study of defects in frame construction which permit fires to start and spread throughout buildings of this type, thus making control and extinguishment a difficult task, should be given special attention. Let the same exhaustive study be made of ordinary, mill or heavy timber, semi-fire-resistive and fire-resistive construction.

Water Flow and Friction Loss

Another of the many ways a Fire Department can increase its value to the community is to make a study of water flow through the various types of fire hose used in actual service of fighting fire. Of all the factors entering into the activities of a Fire Department, here, perhaps, is found the greatest lack of knowledge.

Friction loss through the many kinds and sizes of fire hose, connections, play pipes and turret pipes should be studied and mastered. This can be accomplished in six months, if fifteen minutes a day is devoted. Sporadic efforts won't bring results, but steady application each day will accomplish surprising progress. Here, too, a definite study-program should be laid out and followed.

First Aid Knowledge Important

Another activity in which up-to-date Fire Departments are pioneering is first aid. Here too, a course of daily instruction and drill should be outlined and then zealously complied with. First aid, as far as firemen are concerned, falls into two great classes: first aid for victims of accidents at fires and first aid for victims of highway, industrial or home accidents. The value of first aid drill and instruction cannot be over-emphasized. However, application should never go beyond the province of first aid; functions thereafter should be only under the guidance of a competent physician. First aid administration by the Fire Department and the transportation of victims should be thorough, but officers and members should never assume the role of physician or surgeon by rendering help beyond that which falls into the classification of first aid.

In all accident cases, a physician should be summoned immediately to the scene and the Fire Department should then operate under his supervision. When a physician is not available, it is always good practice to transport the victim in the most comfortable manner to the nearest reputable hospital, continuing the necessary first aid en route, such as stopping hemorrhages and immobilizing fractures. Local Fire Departments should request their physicians and surgeons to instruct them by a series of lectures and demonstrations so that great proficiency in first aid may be had.

First Aid to Injured—Lowering Patient to Stretcher, Preparatory to Treatment

Explosion Study Beneficial

Another valuable and beneficial way of spending time between fires is to study causes of explosions of all types and the conditions under which they occur. In this category come explosions of illuminating gas, flammable vapors, dust of all kinds including chocolate, sugar, corn starch, flour, grain, soy bean; refrigerating gas, wood dust, aluminum and bronze powders, and so on down

Inspections—Firemen Inspecting a Cellar

the long list of materials and by-products that have, in recent years, caused many mystifying disasters which have taken a heavy toll of life and property. A study of causes, direct and indirect, will prove most interesting.

When the big and comprehensive subject of fire prevention is considered, a study program of several years' duration can easily be laid out. Here, again, the value of a regularly timed and well arranged program of study is obvious.

Calisthenics—Setting Up Exercises to Keep the Men in Physical Trim

Valuable and interesting, indeed, is the subject of perfecting the fireman's knowledge of electricity from a Fire Department viewpoint, with special emphasis on the handling of charged wires of various voltages during fires and at other times, when live wires endanger life and property.

Aid in Time of Great Disasters

Another subject which should prove of great interest to firemen and one which will enable them to render invaluable assistance to their community is the study, discussion and formation of a comprehensive plan of aid which the Fire Department can render during the time of great public disasters, such as floods, hurricanes, tornadoes, epidemics, civil riot, commotion, earthquakes or even when food or water supplies are cut off.

The Matter of Inspections

Inspections of homes, public buildings, schools, churches, theatres, hospitals, institutions and factories is another valuable study. These inspections should be carried out with two thoughts in mind. First: preventing and controlling fire and resultant loss of life, and, second: familiarization with the physical arrangements of such buildings, so that in event of fire, department members may have first hand knowledge of the contents, construction, processes carried on within the premises, locations of stairs, fire escapes, elevators, sprinkling systems, standpipes, fire pumps and gravity tanks.

In connection with such inspection study, a course in the design, construction, installation, maintenance follow. So would the study of local and inspections of sprinkler systems, inside standpipe systems and yard hydrants as well as various other types of private fire protection which can be organized would naturally building codes under which construction, alteration and repair is done. A comparison with codes of other cities might make for better fire prevention.

Court Decisions Should Be Studied

Officers might well study opinions handed down by local and state courts toward the end of learning why certain fire prevention and building regulations have been invalidated while others were upheld.

Other subjects that might be included for study between alarm responses are: chemistry, the modern gasoline engine, types of pumps used by Fire Departments, fire drills, watchmen's school, fire prevention for school children, layout of private fire departments, fire detecting systems, fire alarm systems and many other like topics.

Bodies Must Be Kept Fit and Minds Alert

Some cities have adopted a compulsory physical training course so that all members of the Fire Department are given a medical and physical examination semi-annually and certain calisthenics and physical training is prescribed to best fit the men for the rigorous performance of fire fighting.

We must not underestimate the value of keeping our bodies physically fit and our minds alert. There is no other organization or department that is instantly called upon to render immediate service without definite knowledge of the conditions to be encountered as is the Fire Department. It must meet every situation without time out for planning the surmounting of unforeseen dangers incident to its particular service.

Public Speaking—Addressing Employees of an Industrial Establishment on Fire Prevention

Problems of the Smaller Departments

Officers and members of Fire Departments in small communities, whether paid or volunteers, are handicapped by more and greater problems than those of the metropolitan

departments. They often have no means of regular inspection service and are hindered by lack of fire prevention and building codes as well as lack of licensing.

Moreover, individual members of the smaller departments are called upon for greater endeavor, because of the limited amount of assistance they can expect in the performance of their duties.

In my mind Fire Departments are comparable to armies and when at rest or off the field of battle, it is incumbent upon the board of strategy to propound hypothetical fire-fighting maneuvers, so that the enemy—*Fire*—may be well met and thoroughly defeated. Soldiers do not sharpen their swords when the battle is raging; neither can Fire Departments repair their equipment or train their personnel while the fire is in progress.

Study the Extra-Hazardous Building

Every fire company recognizes extra-hazardous buildings located in its district. Is there any company in the land that has not said about some such building, "Some day that place is going to pop and when it does, we hesitate to guarantee that all will end well?"

Such places should receive particular study with attention given to every function of fire department activity embracing any and all the subjects referred to in this article.

A fire company serving such buildings should maintain a complete record of all hazards pertaining thereto; the officers and men should be possessed of definite information that would be instrumental in saving life and property. Again I want to emphasize the fact that it is imperative that officers and men retain all such knowledge for the added purpose of self-preservation and that they should not, knowingly and unnecessarily, risk their lives, when other lives are not in danger and when they are not in possession of the necessary knowledge.

If it were possible to have all officers and firemen pursue such a course of study and discussion as outlined herein, it would be a safe assumption that fire losses would be cut down and the need of excuses which always follow disastrous fires would almost disappear.

Public Relations

In conclusion, let me say that Fire Department officers and men should train themselves, so that they may be capable of appearing before various organizations, such as church, school, fraternal and civic bodies, to enlist their support and cooperation in the observance of safety and promotion of protection for life and property. The way to educate the public, enlist the support of the newspapers and local government, is to show them what you are capable of and your capability depends on the way you spend your time between fires.

Boston Honors Dead Fire Heroes

A handsome photographic memorial to members of the Boston Fire Department who gave their lives in performance of duty was dedicated recently in the office of Fire Commissioner Edward F. McLaughlin, Bristol Street, Boston.

Forty-nine portraits appear in the frame and the names of eleven other firemen whose pictures were not obtainable are printed in cards neatly embossed and placed in the frame. The memorial was the idea of the Commisssioner and the photographic work was done by Alton Hall Blackington. Metal name plates appear under each picture. The frame was made in the department repair shops.

Henry Gillen, on the staff of the *Boston Post*, wrote the following verse especially for the memorial. This sentiment appears in a frame alongside the memorial:

All honor unto gallantry
In reverence we pay—
That others might have days to be
These gave their lives away.
Now glory shall enshrine each name
And time their deeds defy
Since humble men who sought no fame
Have taught us how to die.

The following is taken from a special order regarding the memorial that was issued to the department by the Commissioner:

"To the Officers and Members of the Boston Fire Department:

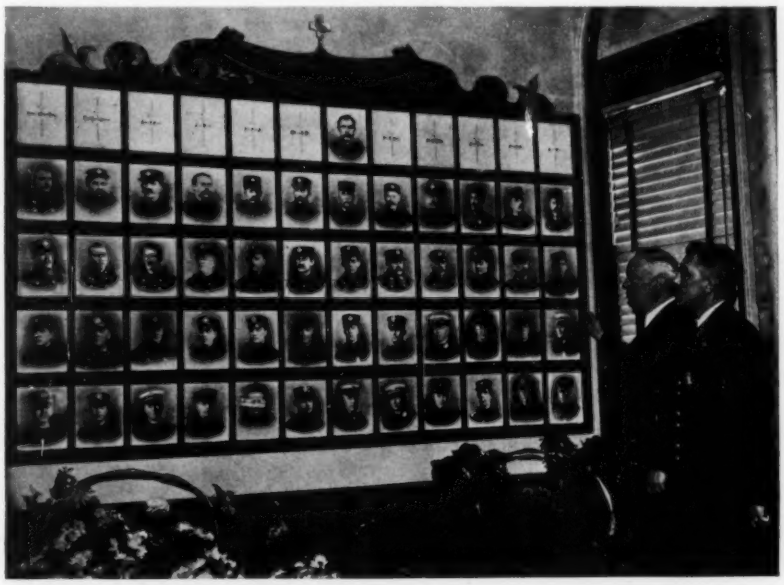
"Many times during the period that I have been executive head of this department the thought has occurred to me that some fitting and permanent memorial should be established in the Commissioner's office, Headquarters Building, Bristol Street, in honor of our associates who have paid the full sacrifice in their loyalty and devotion to duty.

"While it is true that we, as associates of these men, hold annually, a most impressive Memorial Service on the second Sunday in June, I felt that something was still lacking in the more material recognition of the services that they rendered, viz., the most complete sacrifice that men can make for their fellowmen.

"In accordance with this hope and desire, and only after a most complete research has been made, we have finally completed that which, I believe, will forever bring not only to the minds of the officials and members of the department, but also to the citizens of Boston as well, the splendid character, courage and devotion that are manifested from day to day by all our members.

"On Wednesday, December 1, 1937, in the office of the Fire Commissioner, a photographic memorial was dedicated to the remembrance of all those members of the Boston Fire Department who have been killed in line of duty or died as a direct result of injuries received in the performance of duty since November 5, 1872.

"The Fire Commissioner extends an invitation to all those members of the department, who so desire, to view this memorial. The families and friends of the men who appear in this memorial are also invited, and it is requested that members of the department who are acquainted with any relatives of these our heroic dead inform them of the Commissioner's invitation."



Photographic Memorial to Men Who Lost Their Lives in Boston Fire Service

On the day the memorial was dedicated, a large number of relatives of the firemen whose pictures are in the memorial were present, and there were a number of beautiful floral tributes.

In connection with the making of the memorial much research work was done by Captain John F. Leary, of Ladder Company No. 12, and Captain Patrick J. Mahoney, of Engine Company No. 1, who were especially detailed for the task.

HARRY BELKNAP.

Some Notable "Firsts" in the Fire Service

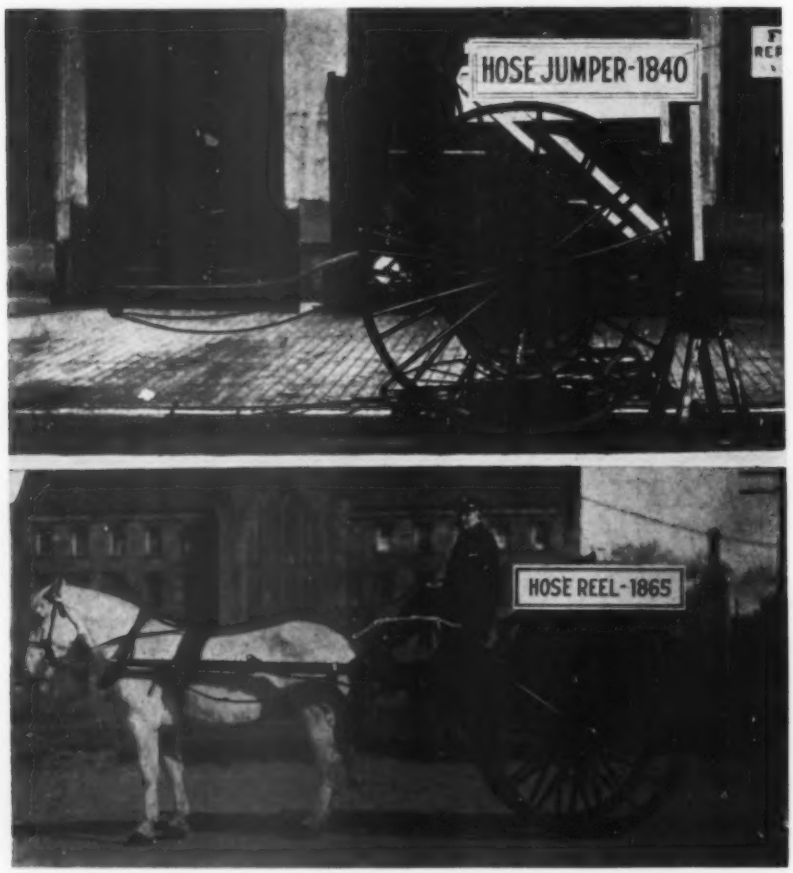
A Chronicle of the Important Developments in Equipment and Personnel of Fire Departments Over a Period of Twenty Centuries, Continued from Last Issue

ST. LOUIS was the first to have a pompier corps, in 1877. It was organized by Phelin O'Toole and used the scaling ladder invented by Chris Hoel, which has since been used in many Fire Departments and Drill Schools and carried on many pieces of apparatus. Capt. O'Toole was killed by the explosion of a portable fire extinguisher, July 6, 1886.

New York had the first Underwriters' Salvage Corps in 1839, followed by Jamesville, Wis. in 1855; Boston, in 1859; Philadelphia, July 15, 1869; Chicago, October 1; Albany, N. Y., Sept. 17, and Baltimore October 1, 1872; St. Louis and New Orleans 1874; Providence Feb. 1, 1875; San Francisco, May 1 and Worcester Dec. 1, 1875; Newark, July 1, 1879; Cincinnati, Nov. 16, 1886; Louisville, Apr. 14, 1888; Kansas City, Mo., June 1, 1889; Memphis, Tenn., May 17, Minneapolis, Oct. 15, and Brooklyn, N. Y., October 16, 1895; and many others since then.

New York was the first to have a search light for service at fires, installed January 1, 1899.

St. Joseph, Mo., had the first swinging harness in 1871, which was for one horse only; Alleghaney City, now a part of Pittsburgh, Pa., had the first double swinging harness the same year. Neither of them had a swinging collar. The first with a swinging collar was in Louisville, Ky., in 1872. The first patent for a swinging harness was issued to Edward O'Sullivan, then of San Francisco, later of New York, December 14, 1875. In June, 1877, Mr. O'Sullivan sold an interest in his patents to Joseph Speddy, a battalion chief of Cleveland, who with Isaac Kidd, also of Cleveland, was the first to manufacture them in the East. Several others made them later.



Two Early Forms of Hose Reels—Hand Drawn and Horse Drawn

Sliding Pole Invented in 1878

Sliding poles, now in almost every fire station were the most rapidly and universally adopted devices, after their success was known, in the history of the fire service. Necessity was the mother of their invention. In 1878, Engine No. 1 of Chicago had a colored company with a white Captain, David B. Kenyon, who invented the sliding pole in that year.

Just prior to that time there was an epidemic of quick hitching in fire departments throughout the country. Some stations had sliding shoots alohgside of stairs from sleeping to apparatus floors. Capt. Kenyon devised a pole to replace the shoot. A mechanic of much ability, he rounded a piece of timber to three inches in diameter and rubbed it down to a smooth surface with sand paper and oil. It was installed on April 21, 1878.. George Reed, a colored fireman, was the first to use it. It was a success, and another was placed in the same station May 24, 1878. It was quickly adopted for other Chicago stations and in other cities. Not realizing how extensively sliding poles were to be used, Capt. Kenyon did not have it patented. He died from injuries received by being thrown from his buggy enroute to a fire when acting as a battalion chief, October 24, 1884.

The first metal sliding pole made of brass was devised by Captain Charles Allen, of Engine 1, Worcester, Mass., and first used in depart-

ment headquarters, where that engine was located, June 14, 1880. The Boston Protective Department had the second brass pole, May 25, 1881. Brass poles at once superseded wood poles.

First Electric Fire Alarm Telegraph System

The first electric fire alarm telegraph system was installed in Boston, and the first alarm by the system was turned in at 8:25 p.m., Thursday, April 29, 1852, from station 7, for a small house fire.

This system was invented by Dr. William F. Channing, son of a prominent minister. He conceived the idea when S. F. B. Morse invented the telegraph in 1839. The machinery for the original system was invented and constructed by Prof. Moses G. Farmer, of Salem, an electrical engineer of great ability. The original system was not automatic.

Dr. Channing, in 1855, delivered a lecture on fire alarm telegraphy at the Smithsonian Institute, Washington, D. C. One of those who heard it was John N. Gamewell, telegraph operator and postmaster at Camden, S. C., who became interested and purchased Dr. Channing's rights to construct the system in cities other than Boston. The system has ever since then been known as the Gamewell system.

When the Civil War commenced, Mr. Gamewell went to his home in Camden, S. C. where his fire alarm patent and rights were confiscated by the U. S. Government and sold at public auction in Washington, in May, 1853. John F. Kennard, of Boston, afterwards superintendent of the fire alarm system of that city, went to Washington with $20,000 to purchase the Gamewell interests, expecting to have to pay about that amount therefor. He purchased it for the surprisingly small sum of eighty dollars.

After the war, the then owners of the system returned to Mr. Gamewell a large portion of his patents, took him into the concern and made him its President, which position he held until his death many years later.

Philadelphia was the second city to have a fire alarm telegraph system, which went into commission May 1, 1856. It was constructed by Phillips and Robinson of that city. St. Louis was the third to have a telegraph system, which was the first made by the Gamewell Company. The first alarm was received February 25, 1858. Baltimore was next, July 2, 1859, followed by New Orleans in June, 1861, and Charleston, S. C., in 1861. The latter system was destroyed when that city was bombarded by U. S. troops the same year. Portland, Me., had the first automatic alarm system, March 19, 1867.

New York, in 1851, established a More key system for telegraphing alarms between police stations and alarm bell towers. In January, 1871, six years after it established a full paid force of firemen, it constructed a fire alarm system under Gamewell patents.

Chicago had the first silent alarm system without tower alarm bells in April, 1888. Boston the second September 17, 1898.

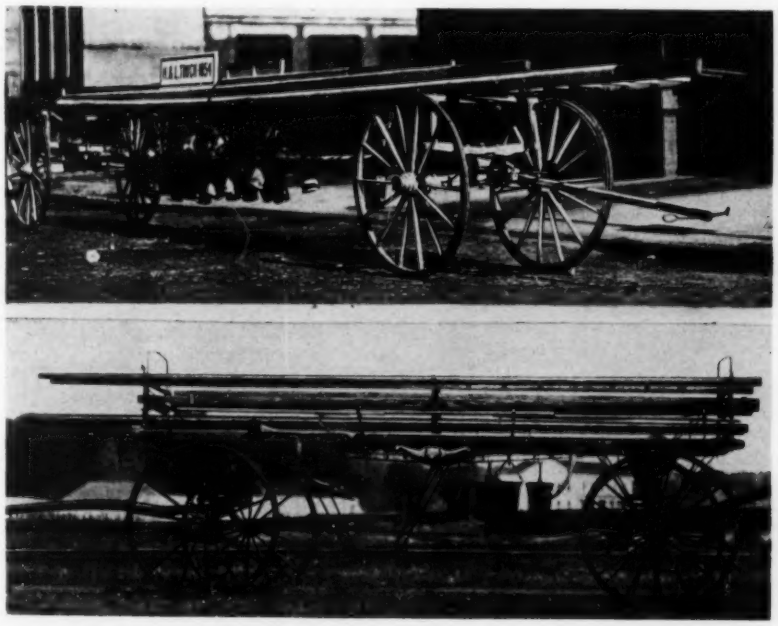
New York had the first water system for fire and domestic purposes, installed in 1830. The Croton system was completed in July, 1842. Boston first used its Cochet water system in November, 1848. Several other large cities installed water systems about this time. Rochester, N. Y., had the first high pressure water system, the Holley, first used at a fire February 18, 1874. Philadelphia had the first of the modern high pressure direct pumping systems, constructed solely for fire purposes, which was completed April 25, 1902. New York followed July 6, 1918, and Cleveland the same year.

First Drill School Established

The first school to drill firemen in their duties was established in New York in February, 1883. They now exist in many cities. New York also had the first fire college to instruct firemen in all branches of the service, established January 1, 1911. Firemen of many other cities have been instructed in both these schools.

Boston First to Pay Call Men

Boston was the first to abandon the volunteer firemen system, in 1837, when it paid its firemen a few dollars annually for service at fires as call firemen. That city had the first full paid Chief of Department who devoted his entire time to the Fire Department. William Barnicoat, who was paid a salary of $1,000 per annum from 1837 until his retirement because of old age in 1854.



Ladder Trucks Eighty Years Ago

Cincinnati had the first full paid firemen, January 1, 1853, when the engineer and driver of the first steam fire engine went into service. They devoted their entire time to the work of the department. The other members of companies were part paid call firemen. This system was adopted in many cities when steam succeeded hand engines.

New York Had First Entirely Paid Force

New York had the first entirely full paid force of firemen, which went into operation July 31, 1865. Brooklyn followed September 16, 1869; Philadelphia, 1871; Chicago, 1872; Boston, 1874.

(To be continued)

PROMOTIONAL STUDY COURSE

Herein is presented a series of definitions, questions and answers designed to aid fire department officers in preparing themselves for promotional examinations. In this department, which appears monthly, will be included questions typical of examinations held throughout the country.

Definitions

Communication: An opening from one building to another, either directly or indirectly.

Cornice: The ornamental projection at the eaves of a building or at the top of a pier.

Curtain Wall: The wall placed on the outside of steel skeleton frames; it carries only its own weight and merely keeps out the elements. No structural parts depend upon these walls.

Davy Safety Lantern: Lantern with a wire mesh around the light, which prevents the ignition of gas outside of the wire.

Dead Ends: Ends of water main which have no outlet.

Questions

(To be answered in next issue)

1. Under what conditions do fires require the use of heavy streams. Name appliances and equipment used in handling heavy streams.
2. Name two public service organizations which cooperate with the Fire Department at fires. What action does each take?
3. Give the definition of an unpierced fire wall; floor; ceiling.

False and True Questions

(Is each question false or true? Answers in next issue)

4. T F—Wherever possible, sprinkler systems should be provided with at least two sources of water supply.
5. T F—Firemen entering the hold of a ship on fire should always have the lifelines secured to them.
6. T F—In spotting ladder trucks, no attention need be given to hydrant locations.
7. T F—In many cases of ship fires, little opportunity exists to remove the cargo and get at the seat of the fire itself.
8. T F—Pails filled with sand are useful for extinguishing fire in a power plant where there is "live" electrical equipment.
9. T F—There is no danger to men operating at a fire from nitric acid, as long as they do not come in direct contact with the acid itself.
10. T F—Incipient fires are frequently checked solely with the aid of the sprinkler system.
11. T F—It is unnecessary for heat to rise to the fusing point of the head for the head to properly perform in case of a fire.
12. T F—Static pressure is the pressure exerted by a body when in motion.
13. T F—The bursting of a single length of hose might mean the loss of life or property of great value.
14. T F—Rubber, in powdered form, may cause explosions.
15. T F—Coal piles when wetted are not subject to spontaneous ignition.
16. T F—A line stretched directly up the well hole to the fifth floor will furnish a more powerful stream than a line stretched by stairway to the same floor.
17. T F—It is as important when about to raise aerial ladder to note presence of wires or other obstructions on sides as it is to note clear conditions directly above ladder.
18. T F—Aerial ladders when raised, and being lowered against building, should be halted just before actually reaching desired point of contact.
19. T F—Hose should be kept free as possible of oil and grease.
20. T F—Standpipe intake connections are equipped with butterfly (clapper) valves.
21. T F—Gasoline dripping on hose finds its way through the jacket and dissolves the cement in the tube.
22. T F—Precautions need not be taken before flooding the hold of a ship involved with fire.
23. T F—Reliable hose is the most important equipment of an efficient engine or hose company.

Completion Statements

24. The device in a sprinkler system through which water is discharged on a fire is called a .....
25. One chemical which gives off an inflammable gas when wetted is called .....
26. The spreading out of a fire on the upper floors of a burning building which has not been opened for ventilation is called .....
27. The higher a line of hose is carried up in a building, the ..... will the engine pressure be, if a good nozzle pressure is required.

Answers to Questions in Previous Issue

1. A building of this type is apt to burn quickly, due to construction involved. The large open basement, wherein may be found great quantities of combustible materials, permits the fire to spread with great rapidity over the entire area. While the fire will not rise through the partitions dividing the stores, it will rise behind the lath and plaster on the side walls and rear; also in the front, if the front is finished in lath and plaster. If fire reaches the cock loft over the stores, it will travel from one end of the row to the other, as these cock lofts rarely have dividing walls between stores. The ceilings of the stores are usually suspended by short stringers which support the ceiling 2 x 4's.

The occupancy of the stores, with the exception of the lunch room, may be considered troublesome. The motorcycle garage and repair shop will probably contain a great deal of combustible material, which will develop into a hot, fast fire, if involved. The battery service station will likely have a great number of storage batteries therein, and if good ventilation is not provided, there is a possibility of hydrogen explosion. In addition, the sulphuric acid fumes, in the event that this store becomes involved, may prove troublesome to the men. The tire repair shop will make a hot fire and will throw off heavy, pungent smoke.

Assuming that the assignment of apparatus on the first alarm will include three engine companies (all two-piece companies), one ladder company, and two chemical and hose companies, operations would be as follows:

First, assume command and then locate the fire. Order first engine company to stretch in single line by way of stairway from street and put in operation beneath store under which the fire is burning with greatest intensity. While this operation is being performed, order truck company to open up doors at the front leading to all basements, and open the windows at the rear to provide ventilation; also open store doors.

Second engine company would be ordered to stretch in line to the rear to cover exposures, particularly if there is an alley at the rear of the buildings.

Third engine company would be ordered to stretch in another line to front entrance of basement. If, however, none of the lines can enter the basement, due to the intense heat, or great quantity of smoke, it would be necessary to get cellar pipes into operation. This would be accomplished by cutting holes through the floor in such positions as to enable the streams to do the most effective work.

While this work is being performed, members of other companies would be assigned to make a continual survey of the ground floor to detect any fire passing up through the partitions. If smoke is accumulating on the store floor, all skylights over the four stores should be opened up to relieve this condition.

Additional lines will be stretched, if needed, to the front or rear, or to the inside stairways leading to basement.

A fire of this type, if streams are gotten into operation quickly, and if there are sufficient of them, is not apt to prove troublesome. The chief precaution is to watch exposures, to prevent fire rising and entering the cock loft. There will be little danger to the three story dwelling across the street, as long as lines are in operation on the street. Holding the fire to the cellar will prevent any danger whatsoever to this structure.

Blank walls on either side of the row of buildings involved, while usually affording excellent fire stops, may not be entirely impregnable. If fire is burning with intensity in basement of the store buildings, another precaution would be to have members of the truck company enter basements of the buildings on the north and south to be sure that the fire is not passing to either of these buildings by way of defective basement walls, or other openings.

2. Exposed steel trussed roof is apt to be more dangerous than one of ordinary construction, due to the tendency of exposed steel beams to warp when temperature surrounding them suddenly changes. For example, if they are heated by a fire, and struck by a stream of cold water they are apt to warp

badly, and may cause the roof to collapse or may displace walls. On the other hand, a sudden rise in temperature, due to fire quickly enveloping them, will produce the same result.

Heavy timber beams, such as are found in mill constructed buildings, will resist fire for a remarkable length of time (considering that they are combustible). Then, too, their period of endurance can be judged quite accurately, whereas exposed steel beams are a very uncertain factor in the presence of a hot fire.

3. False; 4. True; 5. False; 6. False; 7. True; 8. True; 9. True; 10. False; 11. True; 12. True; 13. True; 14. False; 15. True; 16. True; 17. True; 18. True; 19. True; 20. True; 21. False; 22. False; 23. True.

24. . . . concrete . . .
25. . . . shallow . . . . .
26. . . . Fire Department . . .
27. . . . nozzle pressure . . . friction loss.

Fire Wardens Meet at Newton

Leonard Dawson, of the Gamewell Company, spoke on "Fire Alarm Systems" at the meeting of the Middlesex County, Mass., Forest Fire Wardens' Association which was held in the fire station at Newton Center on the evening of December 16. Other speakers were Commissioner Ernest J. Dean, of the State Department of Conservation, and Maxwell C. Hutchins, State Fire Warden. The latter was presented with a handsome lamp by President John Campbell in behalf of the association.

Chief Clarence R. Randlett, of the Newton Fire Department, acted as host and showed the visitors over the Newton fire alarm headquarters. Among the Chiefs present were Chief Frank E. Tracy, Woburn; Chief Thomas A. Qualey, Medford; Chief David A. DeCourcy, Winchester; Chief George L. Johnson, Waltham; and Chief Warren Belcher, Winthrop.

HARRY A. BELKNAP.

Allingtown Host to Chiefs

Dr. Howard W. Haggard, of Yale University, physician, author and nationally known authority on poisonous gases, was the principal speaker at the December meeting of the New Haven County Chiefs' Emergency Plan held in the quarters of the Allingtown, Conn., Fire Department, on December 21. President John Pachl presided.

The visiting officials were welcomed by Chief Frank H. Milderberger and Fire Commissioner John Snyder. Through the courtesy of Michael A. Connor, Commissioner of Motor Vehicles for the state of Connecticut, Inspector J. Neefus of that department gave a very interesting talk and projected two reels of sound pictures on traffic conditions, safety appliances, and the existing dangers to motorists and fire apparatus, while the latter is answering a fire alarm.

Upon the invitation of Chief Lewis F. Stowe of Milford, the January meeting will be held in that town. The principal speaker will be Ex-Deputy Chief Henry B. Helm, New York Fire Department.

THOMAS F. MAGNER.

New Headquarters for Quincy

George Ernest Robinson, Boston architect, has completed plans for the new central fire station to be built in Quincy, Mass.

The building will be of brick with steel framework. There will be a central portion, with two wings, one containing the fire alarm equipment and the other the Chief's office and Fire Prevention Bureau.

Chief William I. Sands

The frontage will be 130 feet with depth of seventy feet. The apparatus floor will be sixty feet by fifty feet, providing space for a double engine company, ladder truck, special service car, and Chief's car and Deputy Chief's car. The building will be two stories in height with repair shop, hose drying racks, and oil heater in the basement.

In the rear of the first floor there will be a kitchenette and dining room and a study room. The right wing is to contain an entrance lobby, Chief's office, Fire Prevention Bureau, watch desk, toilet and wash room. There will be storage space in the basement of this section and on the second floor will be the Deputy Chiefs' office, bedroom, and toilet.

The second floor of the central section will contain three officers' rooms, a recreation room with open fire place, nine bedrooms with accommodations for two or three men each, one room with four beds, locker room with fifty lockers, officers' toilets and shower baths, and men's toilets and showers.

There will be five brass sliding poles. The recreation room will be finished in knotted pine. The apparatus floor will be of concrete and the walls will be faced with tile or ornamental brick. Recessed overhead lighting will be used. The central portion of the station will be of water struck brick and the wings will be of Quincy granite.

In the fire alarm section, space has been provided for 24-box circuits, four primary alarm circuits, four secondary circuits, and a PBX telephone switchboard. Provision will also probably be made for teletype and radio transmission. Thomas J. Smith, Superintendent of Fire and Police Signals, will be in charge.

The estimated cost of the building and fire alarm equipment is $152,000. Mayor Thomas S. Burgin and Chief William J. Sands, of Quincy, are personally supervising the plans in co-operation with the architect. Provision is to be made for a drill tower in the yard at the rear of the station. The site is on Quincy Avenue, taking in the land occupied by the present central station and an adjoining lot.

HARRY BELKNAP.

Rules for Gas Shut-Off Valves

As part of its regulations for protection from fire and panic, the Commonwealth of Pennsylvania has enacted certain rules for the construction, installation and maintenance of gas shut-off valves.

The gas shut-off valve is defined as a valve attached to the gas supply pipe on the inside of a building and before it enters the gas meter. It is so constructed and installed that it can be manually operated from a control box on the exterior of the building, which shall also be arranged to operate automatically when subjected to a predetermined temperature.

The valves must be of a type approved, and the control boxes are to be provided with a lock and key, which can be opened by the Fire Department. The shut-off must be installed only by authorized persons.

Architect's Sketch of New Fire Headquarters for Quincy

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

TEST OF FIRE APPARATUS MOTORS

WHEN an alarm is received, is no time to find out that the motor of the fire apparatus will not turn over.

For that reason, some departments make daily or twice-daily tests of the motor, or may even take out the apparatus frequently for road tests.

The replies to this round table discussion indicate the prevailing practice. It is a continuation of the discussion that appears in the previous issue.

Discussion of the Question

Bill J. Suddarth, Chief Mechanic, Chickasha, Okla.: In order that motors on fire apparatus will at all times start instantly, they should be thoroughly inspected, and adjustments made at definite periods by an experienced mechanic. Upon him the responsibility may safely be placed.

It would be a better practice to give a road test once a week, running the motor long enough to thoroughly warm the engine than to start the motor twice a day at change of platoons, providing there are runs between road tests. Starting the motor not only twice a day but *just once* a day, where there are very few runs, is harmful to the machine.

Leakage of fuel or fuel vapors into the crankcase mostly occurs during the "warming up" period when the fuel is not thoroughly vaporized and burned.

Practically all present day engine fuel contains a small amount of sulphur which, in the state that it is found, is harmless, but this sulphur on burning forms certain gases, a small portion of which are likely to leak past the piston and rings, and reacting with water, form very corrosive acids. This is a condition which we cannot wholly avoid, but it may be reduced to a minimum by proper care of the engine.

As long as the gases and the internal walls of the crankcase are hot enough to keep water vapor from condensing, no harm will result, but when an engine makes short runs, more so in low temperatures, moisture will collect and unite with the gases formed by combustion, thus forming an acid. Serious etching or pitting is likely to be the result. This condition causes rapid wear on piston pins, camshaft bearings, and other moving parts of the engine. Notice the amount of water dripping from the exhaust pipe on a cold day, and you will get an idea as to how much moisture is formed by combustion.

Fire apparatus engines making short runs are more subject to sludge or jell forming in the crankcase because the exhaust gases are charged with water vapor, and the moment these gases strike a cold surface, they will condense forming drops of water. On account of a certain amount of these gases passing the piston and rings, even under the most favorable conditions, we will have the formation of water in the crankcase until the engine becomes warm. When the engine becomes *thoroughly* warm, the crankcase will no longer act as a condenser, and all of the gases will pass out through the crankcase ventilator system. The old style machines do not have a crankcase ventilator system, and under such conditions, crankcase dilution, corrosion, water in crankcase, and sludge or jell forming will be cut to a minimum.

If all motors were run often enough and long enough to *thoroughly* warm them up, say once a week, very little if any sludge would form.

The oil and crankcase on heavy duty fire apparatus engines, such as motors similar to 750 and 1,000-gallon American-LaFrance pumpers, will not thoroughly warm up in thirty minutes under normal conditions. Before draining the oil on a pumper in our department, the motor was run thirty-five minutes, and the bottom of the oil pan was still cold. The radiator was covered until the cooling system almost reached the boiling point.

Oil should always be drained after it is thoroughly warmed up; if drained cold, sludge that is formed will be left in the crankcase. Sludge, or jell, is formed by the mixture of small quantities of very fine dust, water, and oil.

I have read of more than one case where fire apparatus, making out of town runs, never reached their destination because of burnt out bearings. Probably sludge was the cause for stopping the oil circulation. Where the crankcase is not removed at definite intervals, engineers should be warned to watch the oil gauge. It should, of course, be watched regardless.

Another danger where a motor is started twice, or even once a day, where there are few runs is that the motor and fuel are cold. In a short time if you turn the motor with the crank, it will be found to be slightly stuck and very stiff, similar to tight bearings. Why? Simply because all the lubrication is washed off the pistons and cylinders by raw gasoline, causing metal to metal contact. Moisture forming on the pistons and cylinders will then cause rust to set in. In our case, we discovered this condition before it had time to do any damage to the motor. Had this condition not been discovered in time, anyone knows what might have happened.

Following is some information that might be of some value to departments that have heavy duty engines equipped with a 6-8 volt starting system.

A 6-8 volt system does not have enough power to turn the motor enough revolutions per minute to make it start easily. Two 6-8 or one 12-16 volt battery can be wired to the starting motor only, unless some changes are made in the other circuits. The starter failing to turn the motor over, will then be eliminated. In addition this will do away with possible delay on runs caused by the compression release lever failing to operate properly. The compression release lever can be left down where it should be for quicker starting.

Practically all electric starting motors are capable of standing exceedingly heavy overloads for short periods. It is nothing unusual for these small motors to have a factor of safety of five or even seven for a limited time. That is, they will take five to seven times the normal amount of current for a brief period without injury.

C. E. Foster, Chief, Astoria, Ore.: We start our motors at eight o'clock every morning and run them five minutes. We have a connection that is fixed to the exhaust pipe of the apparatus that

HERE IS THE PROBLEM

What method do you employ for making sure that the motors on apparatus will at all times start instantly?

Which do you consider the best practice: Starting motor twice a day at change of platoons or, a road test of say half an hour, once a week?

Do you believe that starting a motor twice a day, especially where there are very few runs, is harmful to the machine?

If so, why?

conducts the burnt gas-fumes outside of the building so as not to fill the apparatus room with the smoke and gas. The hose is metal and is connected to an iron pipe. We find this method very satisfactory. If the room is cold in the morning in the winter time, we cover the radiator to prevent the draught of cold air into the engine.

All of our apparatus moves about five times a week. I believe that the daily starting is better than the road work once a week. If there were no calls, I believe weekly trials would not be sufficient. I believe there is no harm in starting the motor twice a day, although we believe once a day is satisfactory.

Frank Miller, Chief, Linden, N. J.: Motors are checked twice daily, that is at the change of platoons. The engineer of the incoming shift starts and runs the motor for five to six minutes to insure quick starting and to detect any irregularities. If anything wrong is noticeable or detected, the repair man is immediately notified to correct such a condition.

I do not approve of the half hour road test each week, nor do I particularly approve of the above practice, but in my case it is the best method at present. My reason for not approving of the above is that the motor running five to six minutes does not run long enough to allow the heat to penetrate through the metal enough to evaporate the particles of moisture caused by condensation, this same moisture finds its way into the crank case, and eventually causes an emulsion or sludge, which means a frequent change of crank case oil.

George Alford, Chief, Pine Bluff, Ark.: We start our motors at shift time, morning and evening. We run the trucks forward 15 feet then back to position. We also start the motors at 8 p.m., letting them idle for five minutes.

Starting apparatus as stated, I believe to be the better practice for departments that have to answer frequent alarms. For volunteer departments that answer alarms infrequently I would consider the 30-minute road test practice in additional to the above test.

Starting the motor twice a day is not harmful if the engine is not raced. A cold motor, if it has been standing for several hours, has all lubrication drained to the bottom of the crank case and unless apparatus is kept in a warm house, which is practical for paid departments, it will require several minutes for motor to heat properly and bearings and moving parts to become lubricated.

Frank H. Smith, Chief, El Dorado, Ark.: Our motors are tested twice daily at the change of platoons. A motor that is idle for a number of hours, has dry cylinders. In starting, one is apt to injure the cylinder. Starting the motor twice a day is better for the upkeep of the motor as it enables the cylinders to stay lubricated. In the motors of fire trucks where the walls of the cylinders are not lubricated, there is danger of the rings scoring the walls of the cylinders. Starting the motor twice a day may draw on the batteries, but batteries are cheaper than motors.

Frank C. Newman, Chief, Melrose, Mass.: There is no sure method that motors will start at all times. However, good gasoline and good oil are very essential for quick starting. I would rather use the motor twice a day and be sure it is going to start, then to have a road test once a week and not have it start. It is possible that something may happen in a road test that you may not discover until you want to use it the next week, and it may be serious. If you do not use a motor, you can't do it any harm.

Frank W. Fuller, Chief, Brainerd, Minn.: As we work three platoons, the drivers that are on from eight a.m., to four p.m., are responsible for the batteries being up on both gravity and voltage. The rectifier is usually used about once a week, or oftener, if necessary, which assures us that the batteries are in good condition. In my opinion the battery is the greatest cause of starting failures.

It is our opinion that starting motors once a day is sufficient, as that circulates the oil and gives a check on the motor condition. The drivers going on at four p.m., are the ones who start the motors, and they also check the lights.

We cannot see why starting the motor twice a day would be harmful, but do consider it unnecessary.

Once monthly we submit an inspection form and as we change shifts it is made by the drivers who are going off from the eight a.m., to four p.m., shift. This assures the on-coming men that the apparatus is in good condition for them to commence the month. We find this form to be very valuable to us, and believe that something similar should be used by all departments who do not have regular drivers on duty, as they have a real need for them.

Henry R. Taft, Chief, Norwich, Conn.: We check our apparatus by starting the motors, driving the apparatus out of the station around the block, and return to quarters. The road test is the better practice even though it be but once a day.

Starting motors just twice a day is harmful if the apparatus does not respond to very many runs. In starting the motors, naturally the driver uses the choke furnishing a charge of rich gas into the cylinders to make the motor start readily. If motor does not run awhile, a certain percentage of the gasoline goes down the cylinder walls into crank case which dilutes the oil. If the units in the crank case are not checked often, there is a possibility of burnt out bearings when responding on even a short run. Motor pistons will freeze in cylinders if the motor stands idle for any period of time.

James Black, Chief, Grand Forks, N. D.: Ignition points and wiring is checked every two weeks. Gas tank is refilled after every run of any duration. Also checked once a week. Any irregularity in running of the motor is reported to the mechanic as soon as the apparatus is back in quarters. The storage battery is checked weekly.

A road test of half an hour once a week would be the better practice. A motor may run perfect while idling, but under a load may start missing due to a defective spark plug or partly plugged gas line.

Imperfect combustion in a cold motor, may cause abnormal carbon deposits in the cylinders, gums up the valves, washes the oil off cylinder walls and causes dilution of motor oil. There is no guarantee that the motor will start the next time, than if it had remained idle for several days.

G. L. Mathews, Chief, Pocatello, Idaho: We start the motors twice daily, watch battery terminals, and distributor. If the cars are not used often, I think a road test should be given at least once a week, as you can test lights, brakes, and tires as well as motor on such a test.

I believe a motor started often will keep poor oil from gumming piston rings and valves, and keep the battery in better condition.

George W. Hoblit, Fire Marshal, Lincoln, Ill.: We start our motors every morning at eight o'clock and run them for five minutes or more.

I believe that starting the motor at change of shifts is the best practice as the man going on duty then knows that the motor is all right.

However, starting the motor is sometimes harmful, due to the fact that some men will not run their motor long enough to heat the oil in the crank case and the gasoline that might get past the pistons from choking or the water that may have collected in the crank case, does not get warm enough to vaporize and pass on through the breather cap. The oil does not get a chance to properly lubricate the pistons and cylinders until it is heated.

R. H. Wolff, Chief, Norfolk, Neb.: We have 24-hour shifts and we start the motor every morning and check the battery and see that the gas tank is filled. If the motor is run for say 10 minutes, if not longer, it will enable the oil to work up in the motor then starting the motor daily is not harmful. However, if you start the motor too many times and do not run it long enough the gas will wash all the oil from the pistons and then you can't start the motor easily. This practice also results in gasoline going into the oil.

G. M. Houren, Chief, Winnetka, Ill.: We assure quick starting by keeping the ignition clean and using good high test gasoline. We start the motor twice a day but we run the motor slowly. I do not believe starting the motor twice a day is harmful if the machine is not raced.

A. E. Homann, Chief, La Porte, Ind.: We check batteries and wiring regularly. Oil is checked regularly and changed once yearly. Trucks are carefully checked and greased monthly. We do not test daily or start motors. We rely on our checking of all necessary parts. We also check after each run.

FOR THE NEXT ISSUE

There will be a discussion of the fire hazards and problems of erecting building fronts in business sections with solid walls, other than openings for show windows and entrance on the ground floor.

Westchester Chiefs Consider Oil Burner Fires

The outstanding feature of the regular meeting of the Fire Chiefs Emergency Plan of Westchester County, which was held at Fire Headquarters, Pelham Manor, N. Y., on the evening of Wednesday, December 15, was a paper on "Oil Burner Fires," by Chief John J. Brennan, Pelham Manor.

The Plan was welcomed by Chief Brennan, who introduced Mayor Edmund C. Gause, of the village. The Mayor expressed his pleasure at being able to entertain the association.

Judge Hoop, Bronxville, for the Legislative Committee, asked members to submit any problems that would require legislative action to the committee of the state association, so that coordinated action could be taken on them before the program is finally made up.

It was reported that Ex-Chief Sullivan, Greenwich, Conn., is still very ill at the local hospital.

Assistant Chief Vandewater, Hastings, asked the members to send in the blanks provided, properly filled in, so that a chart of the County's apparatus, etc., could be prepared as soon as possible. It was also requested that Chiefs send in copies of their Fire Department budgets.

There was considerable discussion on the question of sending in alarms for fires on parkways. Suggestions were made that telephone standards be installed, with proper signs indicating their purpose, so that, in case of automobile fires, the proper departments could be notified. The matter was left to the committee in charge, with authorization to act with the police authorities.

Chief Brennan described the various types of oil burners—domestic, commercial and industrial—and the hazards connected with each. He emphasized the necessity of proper servicing of the burners by experts, to avoid fires from ignition failures, which were a major cause of oil burner fires. All electrical work in connection with burners should be done only by licensed electricians. Standard type copper tubing only should be used, and there should be installed a stop switch at the head of the cellar stairs or at some location of easy accessibility. There should be vent openings outside of buildings. The burners and all parts of heating system, including chimney flues, should be cleaned once a year. After installation, tests should be made of all types of burners. He had used 1½-inch hose streams on oil burner fires, the steam from contact with burning oil smothering the flames. Faulty construction was responsible for many fires.

There was lively discussion of Chief Brennan's paper.

There were 110 present at the meeting. Four new members were elected. Refreshments were served by the local department after the meeting.

Blast Follows Burst Electric Globe

A stream of gasoline striking an electric light bulb, caused it to burst, ignited gasoline fumes, and resulted in an explosion and fire that destroyed a fireproof garage at Lewisburg, Pa.

Added to the danger of gasoline explosions were 25,000 rounds of machine gun and rifle bullets stored on the upper floor of the two-story brick building. The ammunition was the property of Troop G, 103d Cavalry, Pennsylvania National Guard, which had been using the building as a headquarters pending the construction of a new Armory.

The interior of the garage was gutted, twenty-five automobiles were destroyed and valuable equipment and records belonging to the Guardsmen were lost. A mechanic was badly burned and three volunteer firemen suffered cuts fighting the blaze. Several other firemen were bruised when a Fire-Police Patrol from Sunbury upset, while speeding to the fire.

In addition to the Lewisburg Fire Department, appeals for aid brought three pumpers and a city service truck from Milton, a pumper and squad car from both Northumberland and Sunbury, and pumpers from Mifflinburg and New Berlin. In addition to the water supplied by the city mains, two pumpers drafted water from nearby Bull Run. Eight hose streams were directed on the fire, while other lines were used to prevent the blaze from spreading to nearby frame buildings.

FRED. K. SHIRK.

The Guest Arrived Too Soon

Scituate, Mass., was placed in rather an embarrassing situation. It ordered a 65-foot ladder, and then proceeded to erect a new fire station to house it. But the ladder arrived before the station was completed, and now the ladder has to be housed in North Scituate, five miles away, for the time being.

A Buck for Roe

This is photographic evidence that Chief J. Ray Roe, of Abilene, Tex., got his buck, a 185-pound ten-prong beauty.

Chief J. B. Fish Dead

Chief J. B. Fish, of Estancia, N. M., rode to a residence fire at the back end of a fire truck. Just as he stepped off the rear platform, he fell dead, as the result of a heart attack.

He was born in Miles, Ia., and came to Albuquerque in 1898 as District Plant Chief of the Mountain States Telephone and Telegraph Company. In 1917 he went to Estancia, where he purchased the telephone company which he operated until a few years ago.

Chief Fish was Vice-President of the New Mexico State Firemen's Association, and has been a member since the association started in 1924.

His widow and one son survive.

Two Buildings Razed in Columbus

Gaunt ruins are all that remain in Columbus, Ohio, of the five-story structure which housed the F. W. Woolworth's store, and a five and four-story building which contained a F & W Grand Store. Firemen battled the flames all night long.

Fifty-seven pieces of equipment and 320 firemen were at this fire. Fire apparatus from Delaware, Upper Arlington, Grandview, Worthington and Reynoldsburg filled in at the city stations while the regular companies were out. One unit from Delaware worked at the fire.

At the nearby Athens Hotel, twenty-nine guests were routed out by heat and smoke. Firemen used the building as a place from which to play their hose streams. A new aerial just delivered to Columbus answered its first alarm.

The first alarm came in at 10:25 p.m., second at 10:29, and a third at 10:45. A fourth alarm was sent by Chief Welsh at 1:25 a.m., when a backdraft set fire to the adjoining buildings.

Thirty firemen were injured while fighting the fire, and the department had to continually move equipment as the fire progressed. Damage was estimated at nearly $500,000. LARRY DONOVAN

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Siamesed and Branched Lines

To the Editor:

When hooked up to a plug with a 750-gallon pump, with 30 pounds hydrant pressure or more, and one line of 300 feet of 2½-inch hose with a 1-inch nozzle, with 50 pounds nozzle pressure, what should the pump pressure be? Another line of 2½-inch hose is added to the pump, this line being 150 feet long with a 1-inch tip, at same nozzle pressure. Then another line of 200 feet is added to the pump, with a 1-inch tip at same nozzle pressure. That makes three lines at the pump. What is the pump pressure now? How is it worked out? Do you add all the lines together and divide by friction loss and add nozzle pressures?

Is friction loss figured the same in double line running into a wye as in single lines?

What are good figures to use in finding out friction loss?

How do you solve a problem, where two lines are siamesed into a single line? When a single line is branched into two lines?

W. E. W.

Answer: In the first problem you give, where the engine is pumping through 300 feet of 2½-inch hose, equipped with one-inch nozzle, and the nozzle pressure is 50 pounds, the solution is as follows:

E.P. = N.P. × (1.1 + K L).

Where K is a factor depending upon nozzle and hose diameters and is, for one-inch nozzle on 2½-inch hose, .105; L, the number of 50 foot lengths of hose in the line, is 6.

Then engine pressure = 50 × (1.1 + .105 × 6).

= 50 × 1.73 = 86.5 pounds engine pressure.

In the second problem, you have three lines of different lengths equipped with one-inch nozzles, all being supplied by the same pumper.

As each line is of the same diameter hose and each has one-inch nozzle, the pressure on the shortest line will be the greatest. In this problem you state that the pressure at each nozzle is 50 pounds. If the pressure at the nozzle on the 300 foot line of hose is 50 pounds, then the pressures at the other two nozzles will be greater, unless the flow through these lines is throttled by partly closing the discharge valves on the pumper supplying them.

It would be impossible to get the same pressure on the three nozzles, unless two of the lines were throttled down.

As to solving for problems where two lines are siamesed into a single line, the usual procedure is to reduce the two parallel lines to the equivalent of a single line of hose; then add this single line of hose to the single line in layout, giving the total length of single line of hose in the layout. Then solve as we have solved above for nozzle pressure.

Where a single line is branched into two lines, the problem is a little more difficult. If the two branched lines are unequal in length, they must be averaged by adding together and dividing by two. Then combine the two nozzles into a single nozzle having the same area. Reduce the two averaged lines into a single line by dividing by the factor for reducing parallel lines into a single line. Then add this length of single line to the length of single line shown in the layout, giving the total equivalent of the single line of hose. Thereupon solve for nozzle pressure, using the diameter of the combined nozzle and the combined length of single lines.

Use of Suctions

To the Editor:

Using two 4½-inch and one 3-inch (with 2½-inch couplings) suction hose, all 10 feet long, I would like to know which size to put on pump intake in drafting water, using a 1,000 gallon centrifugal pump. Why? And the reason why it would not work equally as well by reversing same. Thank you! E. D. H.

Answer: Probably the better arrangement would be to have the smaller suction attached to the pumper and the larger one leading into the body of water. In this way you would have a larger strainer.

Theoretically, if strainer capacity is sufficient and there is no drop in pressure through strainer, the layout of hose should work equally well either way.

Large and Small Suction Lines

To the Editor:

From a post hydrant having two 2½ and one suction outlet, a 750-gallon pumper was connected by two ten-foot lengths of regular 2½-inch hose (one from each outlet) to a siamese connection 4½ inches to suction side of pump. What advantage has this hook up over 4½ suction direct to suction outlet of hydrant or to suction direct to one of the 2½ outlets with a reducer.

Two 2½-inch lines were taken off discharge side of pump.

The water main was apparently small, as supply seemed limited.

L. A. W.

Answer: Outside of a little bit of flexibility, the use of two 2½-inch suction lines from hydrant to pumper would have no advantage over a single 4½-inch suction from the hydrant to the pumper. As a matter of fact, there would probably be a pound or so greater friction loss using the two parallel lines than there would be where only the 4½-inch suction line were used. Furthermore, it would probably take longer to connect up the two 2½-inch lines than it would a single 4½-inch line.

As noted above, there would be a little greater flexibility, in that the pumper could be connected up even though it were not in line with the outlet of the hydrant, which would be necessary were a 4½-inch hard suction employed.

Air Conditioning Fire Hazards

To the Editor:

Will you kindly answer the following question?

What is the greatest fire hazard in connection with air conditioning?

G. M. G.

Answer: The greatest hazard in connection with air conditioning is the presence of ducts throughout a building, through which air is forced either by suction or pressure. Fire starting in the basement of the building may be carried throughout the structure in a very short time. When the Fire Department arrives at a building wherein fire has started and traveled through the ducts, it is difficult to tell where the fire is burning. There may be smoke coming out of all windows.

The tremendous hazard to life due to this rapid spread of fire and smoke is readily appreciated.

Porous Suction Hose

To the Editor:

Can you advise in regard to the following? Our suction or drafting hose (4 lengths) on our pumpers have become a trifle porous (just back of the couplings) and has hampered us considerably when drafting in the outlying districts.

Do you know of a way that these can be temporarily treated, to somewhat eliminate this porosity? Is there anything on the market with which these lengths can be painted; for in-

stance, something similar to auto-top dressing?

Although these suction lengths are approximately 15 years old, they are otherwise in A-1 condition; new gaskets have recently been installed.

C. H.

Answer: There is no practical method of treating suction hose in the condition which you describe which would render it serviceable for use. About the only thing that can be done with suction hose when it develops porosity is to replace it. It is cheaper and more satisfactory in the long run.

John J. Scully Dead

John J. Scully, President of the American Fire Equipment Company, Boston, Mass., died suddenly on December 29 at his home, 657 West Roxbury Parkway. He was fifty-six years of age and had been in excellent health until a severe cold at Christmas time. A throat infection developed which caused his death.

The funeral was held on December 31 from his late residence, followed by a church service. More than fifty Chiefs attended the services, the delegation being headed by Chief Daniel B. Tierney, Arlington, Mass., President of the International Association of Fire Chiefs; Chief William C. Mahoney, Peabody, President of the Fire Chiefs' Club of Massachusetts; Chief John W. O'Hearn, Watertown, Mass., Secretary of the New England Association of Fire Chiefs, and P. Hildreth Parker, Belmont, Mass., President of the Box 52 Association, Inc.

Pallbearers were R. F. Ambrose, Paul Fennelly, James Carr, J. A. McLaughlin, Thomas A. Lawton, and Hubert W. Tracy. The church was filled with friends and mourners who came to pay their last tribute of respect to one of the most popular men in the fire equipment field. Burial was in Salem, Mass.

John Scully occupied a unique position as a personal and highly regarded friend of almost every New England Chief. Officials who first met him in a business way usually remained as life time customers bound by ties of friendship and affection. He was an associate member of the Fire Chiefs' Club, the Box 52 Association, and the New England and International Associations of Fire Chiefs.

He was a pioneer in the business of selling fire extinguishers in Boston and the firm which he headed, the American Fire Equipment Company, was the successor to the New England Fire Appliance Company. The second floor of the company on Broad Street was fitted up as a meeting place for fire officials and became known as the "Soda and Acid Club." The walls were decorated with old fire prints and convention photographs and each year Mr. Scully gave a Christmas party for the Chiefs and their wives and friends.

He was a native of Quincy, Mass., and was a prominent member of the Charitable Irish Society. Surviving relatives are his widow, a son, Attorney John F. Scully, and two sisters, Miss Mary E. Scully and Mrs. Elizabeth Ago.

HARRY BELKNAP.

By William Paul Babcock

"Time Marches On!"

GREETINGS to Ye Editor of *Ye Oil Power*, a veritable goldmine of practical and historical information published (gratis) by Ye Socony bund.

In his December number he very graphically portrays the change in tastes of the kiddies in the matter of mechanical toys, none the least of his illustrations including an old time H. & L. truck and a modern "aerial". But what touches my heart-strings most intimately is the picture of an old-time "Fire Patrol" wagon, with a crew of six, apparently undersized men and driver, behind a spanking, r'arin' team of horses.

As I look back now, it seems that my interest in Fire Patrols (salvage corps to you) must have been foreordained, or in the cards, or what have you.

It was just such an outfit as above described that I first saw when I was about a dozen years old, I guess, somewhere about the time of the great Tarrant explosion (how many New York Buffs remember that?) when my dad had his law office at Seven Warren Street and I was wont to stroll around the block, down Murray Street, and came upon the Quarters of Fire Patrol No. 1 at 41 Murray. I never got behind the chain across the front doorway in those days. I wish I had, for I should have known some grand guys much longer and been thereby made the richer in wisdom and knowledge of fire control, and that earlier.

If the original of that picture of the "Fire Patrol" is still kicking around 26 Broadway, I would like to suggest that it be loaned to Capt. Wm. S. Cashman, of New York Fire Patrol No. 6, who is accumulating a very worthwhile museum of both "antekew" and modern devices, pictures, etc., in conjunction with the Fire Patrol School. For this toy represents the good old days when the "patroleos" knew what hard work was, and were doing it 20 hours out of 24.

Was I saying something about "time"?

My goodness, it seems only a few days ago when I first became a student and "Buff" at Patrol No. 1, and one of the most jovial of the men I met there was none other than my very good friend Capt. Louis Ammermuller, of whom I wrote recently. And now "Ammy" has shaken the dust of Harlem off his heels and turned in his badge, after 40 years of hard and faithful service, wearing proudly a beautiful diamond ring "the boys" gave him, and he and the Missus will now enjoy the sky line of Little Old New York from their front porch over in West New York, N. J.

Well, Ammy, all I can say is:

"Auf Wiedersehen!"

SEND IN YOUR NEWS

The Editor of "The Cover," invites Fire Chiefs and salvage company officers to submit items for publication in his column.

You fellows who are on the firing lines can do a service for the entire field if you will give this cooperation to Mr. Babcock.

Why not tell us of some of your experiences with salvage work?

THE EDITOR.

INDEX TO VOLUME 90

The Index to Volume 90, FIRE ENGINEERING, from the January to the December, 1937, Issues, is now ready, and will be mailed to readers on request.

Boston Fire Fan a Good Host

Through the kindness and foresight of Ben Ellis, a fire buff for twenty-five years, the men stationed in Bowdoin Square Fire Station, Boston, Mass., were agreeably surprised on Christmas Eve.

A caterer arrived and set a sumptuous feast for the boys to mark Mr. Ellis's twenty-fifth anniversary as a buff. He told the firemen about the days when he was on the pipe with Engine 39 at the historical Chelsea fire and with Engine 26 at the Salem fire. He was one of the few Boston men who served in the auxilary corps attached to Engine 23 during the war, under the late Captain Patrick Murphy.

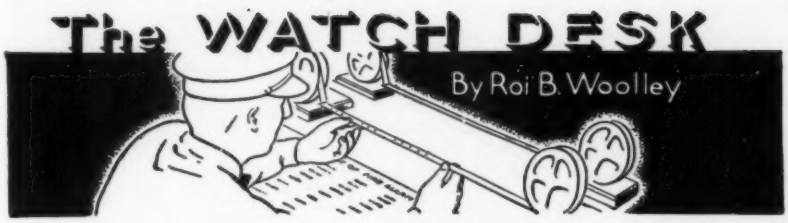
VINCENT T. REGAN.

N. Y. City May End Theatre Smoking

It is believed that one of the first things to face the new City Council of New York City, will be the question of legislation to bar smoking in theatres. The proposed ordinance would also apply to stores employing more than twenty-five persons and doing business that would draw more than one hundred customers at one time.

However, smoking will be permitted, under the proposed rules, in lobbies and designated smoking rooms.

At present the Fire Department can only regulate smoking back stage, but it has no say over smoking in the balconies or other parts of the theatre.



Our inquiring reporter overhauls the firemanic news of the day.

Holiday Goings On

We go to press just before the Christmas casualties are all in, but not before our newscouts sent us the following:

Mrs. Franklin D. Roosevelt (you've heard of her), who announced she would "humor" the President by having real wax candles on the family tree this Christmas, was subjected to the same discipline herself at annual party she gave children at Woman's Trade Union League, New York City. There she dressed tree herself and as finishing touch tipped each breanch with tiny white wax taper. Next day she found tapers removed. "The tree was too dry. We dared not light the candles" was excuse given by President of League. Mrs. Roosevelt agreed.

*

Fire in Manistee (Mich.) destroyed Salvation Army Headquarters and with it the toys and candy to have been distributed to 400 needy children.

*

A general alarm in Washington (D. C.) put hundreds of firemen to work to stop spread of fire in business section, among stores stocked with Christmas merchandise. Two firemen went to hospital, but loss of holiday goods was held to minimum.

*

At Niagara Falls (N. Y.) a bandsaw believed to be 100 years old was put to good use by local firemen in repair of old toys for underprivileged children.

*

In New York City, pupils of Public School 46, the Bronx, visited H. & L. Co. No. 37 and Eng. Co. No. 79 to see firemen repairing toys. Lieut. Chas. Schroff played Santa Claus and put Mickey, the Company's mascot dog through his paces. Much excitement. As matter of fact, visit to firehouse is about the best kind of a Christmas present some kids could want.

Bolt Bothers Blueshirts

Four separate alarms are said to have been turned in by persons in Medford (Mass.) who saw lightning strike home of Isabella Campbell. Three other alarms were sounded in the neighborhood and as local fire men scurried around city without finding a single blaze, additional apparatus arrived from three surrounding cities. That's covering up, say we.

Considerable Crash

When Conrad Beaudat's car collided with another auto and was thrown against fire alarm box, Boston (Mass.), over which was a gas lamp, there was heltopay. Pole snapped, sounding alarm, calling firemen. Emergency gas rig was summoned to shut off gas. Ambulance rushed a woman passenger of one of the wrecked cars to hospital, and police investigated.

How Dry I Am—

There's gnashing of teeth and chagrin in Oaklawn (R. I.), where the volunteer F. D.'s truck ran out of gasoline en route to a recent fire. Chief Earl Irons believes some miscreant has been draining truck's tank for personal use. "Forty-three miles on 17 gallons of gas is entirely outa proportion," Chief Irons contends.

Flash News

Rev. Delbert L. Kinney resigned as Fire Chief of Berne (N. Y.), the post he had held since 1931, to become pastor of Delmar, N. Y., Reformed Church. He'll still go on saving souls! . . . Firemen of Fond du Lac (Wis.) were routed for a time by rats, while fighting fire in city dump. Rodents ran up firemen's legs, raised Hell generally. . . . Because a fire alarm box has been repeatedly knocked down, F. D. of N. Tarrytown (N. Y.) has moved it to front of nearby firehouse. . . . A bronze plaque in Municipal Building has been dedicated to the 316 New York City firemen who lost lives in line of duty. . . . When Alfred Van Lint returned from fishing trip at Schroon Lake he found his wife had started fire in furnace and $500 in bills he had hidden there had been consumed. . . . Congress passed a law decreeing that 50 per cent of revenues on merchandise entering Managua, Nicaragua, be used for maintenance of the Fire Department established by Federal District last year. . . . George Garris, 93-year-old civil war veteran, lost all his savings—$5,000—in fire which swept his home in Stillwater, near Newton (N. J.) . . . An electric light bulb set fire to bed clothes of six-weeks-old Joanna Wheat in her crib at the Delaware Hospital, near Wilmington (Del.), resulting in her death. . . . William Schlarb, 66 years old (Baltimore, Md.), burned to death just six inches from firemen working madly to open door that wouldn't open because his body blocked it. . . . 8,710 applicants passed the test for firemen in recent N. Y. City test. . . . About 80 children were killed in movie fire at Tomita, Japan. . . . Workmen successfully used chemicals to rout a nest of bees in Delaware City (Del.), but chemicals set fire to house, resulting in suit for damages of $1,000. . . . When a $37,000 fire destroyed frat house at Hobart College, with narrow escape for many students, two of them were bounced from school because they caused fire by falling asleep with lighted cigarettes. . . . Carney Collet, Ellston (Mo.) awaits verdict from Washington on his claim for $750, due to his inadvertently burning up that amount of bills. . . . 2,000 and more chickens were roasted in poultry house fire at Franklin Sq., L. I. . . . Saddest story of month is this: Joseph Mosley, aged 5, colored, was burned to death, while little pup he sheltered with his body was found alive. Kerosene lamp exploded in house and family ran, forgetting Joseph. He had spent last effort to successfully save his pup. . . . When Lewisburg (Pa.) armory burned, country for miles around was lighted up—and firemen had to "light out" to dodge exploding ammunition. . . . Hand-operated "Pumper No. 1," of Cambridge F. D.—that dazzled residents of Washington County in the 80's—has been sent to a Washington museum. . . . Over 1,000 Birmingham (Ala.) school children evacuated a school in less than two minutes when it took fire. . . . Fireman Lawrence O'Connel, of the N. Y. F. D. (Eng. Co. 60), broke leg sliding down the pole. . . . The New York Department is again annoyed by fake F. D. solicitors "selling" tickets for so-called F. D. "social affairs." . . . Five firemen, including Chief Roland H. Weigand, Trenton (N. J.), were injured in recent serious fire. . . . When fire destroyed 2-story frame building of Onondaga Indian Reservation School, Syracuse (N. Y.), 122 children were led to safety. Firemen, using 1,500 ft. stretch, saved other building. . . . When students at football rally got out of hand in Berkeley (Cal.), 4 policemen and citizen were injured, $5,000 damage done, firemen had hose torn away from 'em and turned on 'em, while somebody ripped gizzards out of alarm box, putting 33 other boxes out of commission. . . . Greenwich (Conn.) will have paid force of 15 firemen, but Vols. will be retained, 'tis said. . . . Lieut. Frank E. Johnson, 63-year old member, Elizabeth (N. J.) F. D., collapsed and died while fighting fire in private garage. . . . Refrigerating plant at Atlas Market (Atlantic City, N. J.) became an oven, due to short-circuit causing accumulated gas to explode and roasted meat contents. . . . Major Bowes' home, "Laurel Hill," near Millwood (N. Y.) burned to ground when caretakers tried to first extinguish small chimney blaze themselves, then too late sent alarm to wrong community.

Note to contributors: If you do not read your news contribution in the next issue of FIRE ENGINEERING don't despair—if it's suitable it will utlimately find its way into print.

Editor, Watch Desk.

WHAT DO YOU KNOW?

The Editor of "The Watch Desk" welcomes contributions from readers of FIRE ENGINEERING that briefly give facts about interesting, odd things that have to do with fires, fire fighting, etc. Address "Editor, Watch Desk."

Gloucester Waterfront in Danger

Quick and efficient work by the Gloucester, Mass., Fire Department, under direction of Chief Homer Marchant, on October 20 checked a blaze that destroyed a 100-foot frame storage shed of the John Chisholm Fisheries Company and threatened to sweep the entire waterfront.

Fighting the Fire in the Fisheries Storage Shed

The first fire alarm was received at 9:53 a.m. Careless smoking is believed to have been the cause of the fire. Flames spread quickly from piles of oakum to hundreds of tarred fish nets, which gave off a heavy smoke. A deck pipe and several other streams, directed from the steam lighter "Philip," which is utilized as a fireboat by the Gloucester department, proved of great value, as the shed was built directly to the edge of the wharf and permitted the land companies to operate only at one side.

A second alarm at 10:09 brought additional apparatus to the scene, including engine companies from East Gloucester and Bay View. A number of adjoining frame storehouses were threatened, when the flames broke through the roof of the burning storehouse and showered the neighborhood with blazing embers. The fire burned for about three hours and the all out signal was not sounded until 1 p.m. Engine Company No. 3, of Manchester, Mass., covered in at the Magnolia Station of the Gloucester Fire Department. Damage was estimated at $25,000.

HARRY BELKNAP.

Plant Razed at Cly, Pa.

Fire at the National Roofing Company plant at Cly, fourteen miles north of York, Pa., the evening of November 10, injured three firemen and three others, disrupted train and telephone service and caused a loss of $175,000.

More important to members of many volunteer fire companies in York County was their first chance to show the general public how the newly formed York County Cooperative Fire Fighting Association operates.

The blaze was first discovered by several men on a night shift. They called the York Haven Fire Company two miles away, after they saw the blaze was getting away from them.

Responding with York Haven's pumper and chemical wagon was Chief Jesse Newcomer, who took charge as first Chief on the scene. He called for help from seven surrounding towns.

Within a short time, five more pumps and two more chemical wagons had arrived from: Manchester, one pumper; Mt. Wolf, one pumper; West York, one pumper; Emigsville, one chemical, and North York, one pumper; Goldsboro, one chemical, and New Cumberland, Dauphin County, a pumper, both north of the blaze.

One of the first pumps to arrive was that of the Liberty Company, North York, in charge of Chief Joe Eisenhart. Chief Newcomer had an empty coal barge and a power launch, with steam up, waiting at the dock of the river coal company at Cly.

The 600-gallon pumper was driven onto the barge and towed a quarter mile upstream. There the barge was pushed against the bank and drew water from the Susquehanna river. Lines were placed through a marsh and tunneled under four Pennsylvania railroad main line tracks to the blazing plant.

Several pumps, useless because of inadequate water supplies and no more empty coal barges, were placed at strategic positions between the blaze and North and West York, suburbs of York, to protect the five small towns whose apparatus had been sent to Cly.

West York borough was protected by its second apparatus, while a two-truck township company sent an apparatus to North York. Chief Joe Spahr, West York, one of the organizers of the county plan, after two disastrous fires in that borough, was very much pleased with the work done and cooperation shown on the first real test.

The cooperative association was formed after York City Council passed an ordinance requiring the posting of a bond and charging what county firemen called "exorbitant" rates for apparatus

A Fire That Went Places Without Interference

Moscow, Tenn., is a small community of about 300 persons, and is without fire protection facilities. Fire, of undetermined origin, broke out in this little town and destroyed twelve buildings. In the left foreground are many of the household possessions of the victims.

and volunteers called to county blazes. Formed less than a year ago, there are today over thirty county fire companies association members.

Three firemen received slight injuries at the blaze. Two others were injured, when their automobile crashed enroute to the fire and a newspaper reporter received second degree burns when he stepped in hot tar while speaking to company officials on the scene.

Loudspeaker Directs Firemen

At a recent fire, Chicago tried something new in fighting fires. Fire Marshal Michael J. Corrigan and Deputy Chief Anthony Mullaney, standing on a floodlighting truck, and with a microphone before them, directed the activities of the firemen. It was asserted that orders could be distinctly heard both inside and outside of the burning building.

Chief Corrigan Demonstrating the System

The equipment is the RCA public address system and is installed on the lighting apparatus which consists of a 10 kw. Kohler unit, 110 d.c., connected to a 30 h.p. gasoline engine. A Continental rotary converter supplies the power for a triple amplifying system arranged through a double throw switch which provides a secondary source of amplification in the event that one unit becomes disabled.

The limited use of this equipment thus far has proven that there is a need for it and that it indicates a central position for the direction of command by the officer in charge at the fire.

The speaker is mounted on a swivel on top of the cab of the floodlighting truck. The speaker may be moved in any direction, so that the sound may be directed like a searchlight beam. The power amplifying equipment is within the truck, and is independent of the other power supply.

Originally this type of sound projector system was used by the beach patrol service of Atlantic City, N. J.

WHAT'S BURNING

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of December, 1937. These figures, compiled from the telegraphic reports, are based on estimates made at the time, and are subject to later investigations and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Month Ending December 31	Loss in Thousands of Dollars
Paterson, N. J.—Bldg. occupied by Konner's Clothing Store	80
Fort Fairfield, Me.—Libby's Rink destroyed	50
Easton, Pa.—Property occupied by Mohican Company destroyed	50
West Point, Ind.—Interior of consolidated school damaged	50
Cliffwood, N. J.—Burlews Restaurant destroyed	50
East Radford, Va.—Bldg. of Dalton Wholesale Grocery destroyed	80
Ewen, Mich.—Sawmill of Bergland Lumber Co., Inc., destroyed	170
Salineville, Ohio—Winterich China Company plant damaged	65
Pulaski, N. Y.—Old Pulaski Academy building destroyed	125
Philadelphia, Pa.—U. S. Marine Corps storage building destroyed	170
Pittsburgh, Pa.—Property of Schulte United, Inc., damaged	80
E. St. Louis, Ill.—Garage and two bldgs. of Robertson's, Inc	125
Fond Du Lac, Wis.—Laundry building damaged	50
Washington, D. C.—Hahn shoe store and Goldenberg dept. store	400
Caribou, Me.—Fertilizer plant owned by Aroostook Federation of Farmers, destroyed	250
North Adams, Mass.—Lurie block destroyed	65
Niagara Falls, N. Y.—Falls Street business property	80
Cohocton, N. Y.—Bldg. of Cohocton Garage Co. and adj. property	50
Wilmington, N. C.—Plant of Corbett Package Co., destroyed	50
Sweet Springs, Mo.—Colonade Hotel, housing post office and store	50
Dayton, Ohio—Property of H. G. Hartzner Wrecking & Excavating Co	80
Iowa City, Iowa—Plant of National Hybrid Seed Corn Co	290
De Ridder, La.—Real Art Theatre and adj. property	50
Louisville, Ky.—Premier Paper Company property destroyed	50
Tilton, Ill.—Hemp plant of Amhempco Corp., damaged	80
Montgomery, Ala.—Plant and whse. of Montgomery Oak Flooring Co	80
New Orleans, La.—B. Kohlman Hosiery factory damaged	50
Leachville, Ark.—Leachville High School building destroyed	55
Elyria, Ohio—J. C. Penny store and adj. property	50
Manchester, N. H.—Two buildings on Elm Street	50
Warremton, Va.—Yorkshire House, owned by Mrs. K. F. Bowman	50
Hamilton, Ont.—Benzol plant of Steel Co. of Canada	170
Lawrenceville, Pa.—Plant of McCullough-Dalzell Crucible Co	50
McAdoo, Pa.—Business and apt. property of W. Yankovica	100
Fair View, Ohio—Community Center destroyed	50
Longview, Tex.—Four downtown business bldgs. destroyed, others damaged	170
Mahanoy City, Pa.—Business and apartment property	100
Clinton, Iowa—Swift & Co. poultry and cold storage plant	50
Chicago, Ill.—Factory of Superior Match Co. damaged	50
Chateaugay, N. Y.—Boiler bldg. of Sheffield Milk Co., destroyed	50
Philadelphia, Pa.—Eight aeroplanes and two hangars at Boulevard Airport	80
E. St. Louis, Ill.—Burns & Harper garage destroyed	50
Bristol, Va.—Interstate and Dominion Nat'l Bank bldgs. damaged	80
Cleveland, Ohio—Storage plant of City Ice & Fuel Co. destroyed	170
Jackson, Miss.—Central High School bldg. damaged	80
Saratoga Springs, N. Y.—South Hall, dormitory of Skidmore College	75
Kannapolis, N. C.— Y. M. C. A. bldg. of Cannon Cotton Mills destroyed	80
Dry Fork, Va.—Dry Fork Milling Co., owned by E. and S. Jones	70
Memphis, Tenn.—Dwelling of G. T. Fitzhugh in Red Acres	95
Woonsocket, R. I.—Kane Furniture Co. plant damaged	50
Covington, Va.—F. H. Fishman bldg. damaged	50
Paterson, N. J.—Main Street bldg. occupied by Silver Rod Store and Stacy's dept store	80
Port Gibson, Miss.—Main bldg. of Southern Package Corp	80
Birmingham, Ala.—Lake Shore Drive Apts. on Edgewood Lake	65
Caraopolis, Pa.—Canfield refinery damaged	70
Parkville, Mo.—Graham Tyler Chapel at	

Four-Alarm Chicago Church Fire at Which the Loud Speaker System Was First Used

Park College destroyed	110
Norristown, Pa.—Three shops of Hilyard Casting Co.	125
Oceanway, Fla.—School building damaged	60
Kansas City, Mo.—R. E. Elliott Co. store and adj. property	75
Boonville, Mo.—Public school bldg. destroyed	80
Danville, Ill.—Plant of Amhempco Corp. damaged	80
Coldwater, Mich.—Wade Memorial Hospital destroyed	50
Bradford, Ohio—W. H. Winstead Co. tobacco whse. damaged	80

Regional Schools Discussed by Fairfield Chiefs

One of the longest meetings of the year, studded with interesting speakers from Hartford, Poughkeepsie, N. Y. and New Haven was held by the Fairfield County Fire Chiefs' Emergency Plan, at Bethel, Conn., on Wednesday evening, December 15. Superintendent Coleman, New York State Firemen's Home at Hudson, N. Y., Chief Chris Noll, Poughkeepsie and ex-Chief William Frank, Poughkeepsie, spoke of the Home at Hudson and showed motion pictures of the daily habits and various buildings at the Home. Mr. Coleman ended his talk with the statement: "I hope before I pass on to the Great Beyond that I will have had the opportunity to attend the dedication ceremonies of a Connecticut Firemen's Home."

William Mahan, electrical inspector for the city of New Haven, discussed the installation of oil burners, the adding of additional lighting equipment to the home and demonstrated the effects of overloading, various cheap wiring, which "short circuit before they are even used," and other electrical abuses in which firemen are vitally interested.

Herman Hall, Vocational Bureau of the State Board of Education, discussed the Regional Training Schools in Connecticut, saying that despite assertions to the contrary, the state of Connecticut never received any money from the Federal Government to help operate the schools, as all of the instruction on the part of the drill masters was voluntary. He revealed that there were now 21 drill masters, 13 regional schools, from which 223 men have graduated, from 79 different departments. Forty-nine out of the 79 departments have, in turn, had schools in their own departments, at which 1,600 firemen have been instructed. He said all criticism, good or otherwise, would be received for future reference.

The first showing of the motion pictures taken at the Stamford Regional School conducted during the summer months by Capt. Frank Fox, Stamford Fire Department, took place, with Capt. Fox present himself to explain the picture, which showed the various evolutions the graduates were taught.

The meeting was welcomed to Bethel by First Selectman Judd and Chief T. Milton Durant. Commissioner Clifford Merwin, Oil Burner Committee, reported that each Chief in the county would receive a questionnaire through the mail shortly from the Secretary as follows: "Has your community an oil-burner and an oil-storage ordinance?" "Are you in favor of one?" "If you haven't any, why not?" "Have you taken this matter up with your officials?" The Fire Chiefs' Plan committee are willing to help any Chiefs who so desire. Ex-Chief Peter Beckerle and Chief Albert Anderson were also heard on the subject.

Chief George Brencher, Darien, and Leon Meaney discussed the formation of the Litchfield County Fire Chiefs' Emergency Plan, which the Fairfield Plan helped to organize. It was announced that 41 members from 21 departments in Litchfield County had already joined the new organization. Ex-chief William Brett of Washington, Conn., the first visitor from the new Plan, was recognized and spoke briefly. Two new members were elected.

Chief Albert Anderson, Cos Cob, was appointed to the Membership Committee by First Vice-President Thomas Boyle, Chief of Noroton, presiding officer, to take the place on the committee held by the late Chief Isaac Hubbard, Greenwich.

The next meeting will be at Central Fire Headquarters in Stamford, Conn.

FIRE FACTS
BY OTIS SMITH
OBSERVATIONS OF EXPERIENCED RESCUERS SHOW THAT AN EMPTY STOMACH IS AN AID IN RESISTING CARBON MONOXIDE.
THE FIRST MEN IN A GROUP TO COLLAPSE ARE THOSE WHO HAVE EATEN MOST RECENTLY.
THERE ARE MORE THAN ONE HUNDRED VARIATIONS OF THREADS IN 2½ COUPLINGS. A VARIATION OF ONLY A SIXTY-FOURTH OF AN INCH WILL GIVE A WRONG THREAD.
A RESERVIOR, MADE WITH A SALVAGE COVER, IS USEFUL WHEN PLUG AND SUCTION HOSE HAVE DIFFERENT THREADS.

Ex-Chief Mead Dead

Frank E. Mead, aged seventy-six, former Chief of the Greenwich, Conn., Fire Department, died in Stamford Hospital on November 3, following a heart attack. He was the last of the volunteer Chiefs in that city.

THOMAS F. MAGNER.

Utica to Buy New Apparatus

Chief Joseph N. Sullivan, Utica, N. Y., has drawn up specifications for the purchase of two pumpers to cost $25,000. The State Fire Insurance Rating Board proposed a reduction in the fire insurance rate if the city would add two pumpers to its equipment.

New Hampshire Chiefs Meet

Captain Alfred Kinsella, of the Mine Safety Appliance Company, gave a talk and demonstration of gas masks and first aid at the meeting of the New Hampshire Fire Chiefs' Club at the Eagle Hotel in Concord on December 8. Chief Roy W. Mansfield, of Wolfeboro, presided. Chief Charles L. McCarthy, of Worcester, spoke briefly.

HARRY A. BELKNAP.

CORRESPONDENCE

Spokane in 1940!

To the Editor:

Although it was a disappointment to me not to have the 1938 convention of the I. A. F. C. awarded to Spokane, I am one hundred per cent back of New York City to entertain the convention in 1939, and I am working to secure the gathering for my city for 1940.

The last meeting was the first I. A. F. C. gathering that I attended. I want to thank all the Chiefs who were so hospitable to me, and for the cooperation they extended. I do hope that when the 1940 convention city is named, Spokane will have the honor of entertaining the association, and I assure you that that is a great honor for any city.

We have already started preparations in the expectation that we will entertain the I. A. F. C. in 1940.

Very truly yours,
Chief W. P. PAYNE,
Spokane, Wash

Boston Opens Fire College

The Boston Fire College opened for the winter term on January 4 in the auditorium of the Broadway Fire Station. The enrollment consisted of forty-four lieutenants of the Boston Fire Department and three outside officers, namely Captain F. Fleming, Waltham Fire Department; Captain Lawrence F. Lynch, Drillmaster, Brockton Fire Department, and Lieutenant Daniel McLeod, Boston Protective Department.

The initial session was addressed by Chief Samuel J. Pope and Captain John J. Crehan. Chief Pope's subject was "Morale and Discipline." He pointed out proper conduct in public and in company quarters and said that orders should not be given belligerently, but that all commands should be issued in a firm and decisive manner. He said that undue familiarity often leads to breaches of discipline.

The Chief spoke of the importance of exactness and accuracy in making out reports, as these records are often used as evidence in court. He gave an outline of the subjects to be covered in the college course. These include building construction, official papers, fire hazards, operation at fires, water supply for fire purposes, electrical life and fire hazards, fire equipment in buildings, fire prevention and building inspection, subway and tunnel fires, practical hydraulics, response to alarms, mechanical refrigeration, flammable liquid fires and special hazards, automatic sprinkler systems, elementary fire fighting, first aid demonstrations, fire fighting, rescue demonstrations, care of hose and economy of upkeep, oil fires and oil regulations, incendiarism and detection of arson, marine fires, elevator accidents, fire alarm system, motor apparatus, and common and special electrical hazards.

HARRY BELKNAP.

Ex-Chief Cape Dead

James Cape, for many years Chief of Fire Department at Racine, Wis., died at his residence. Funeral services were attended by members of the Fire and Police Departments of Racine, and by a delegation from the Kenosha Fire Department.

Chief Sullivan Now Commissioner

There is no mistaking the fact that Chief J. N. Sullivan, of Utica, N. Y., is the new boss as regards public safety. Shortly after his appointment as Commissioner of Public Safety, he told a group at the police station assembly room:

Chief J. N. Sullivan

"I am Commissioner of Public Safety. I have taken this job without strings. I may not be here long, but while I'm here, I'm going to be boss. If I should not succeed and go down, I'll go down smiling. But it will be after one hell of a battle."

It was said that the public was not satisfied with the Police Bureau. Mayor Carrou appointed Sullivan to his new post, which has jurisdiction over the Bureaus of Fire, Police, Health and Building. He has been granted a leave of absence from his duties in the Bureau of Fire, so that he may serve the city in his new post.

Chief Sullivan is determined to elevate the efficiency, the morale and the public regard of the Police Bureau, whether some of the men like it or not.

He is well known in the fire service and is a past-President of the International Association of Fire Chiefs.

Large Farm Buildings Burned

Much farm produce, and many heads of cattle were destroyed by fire which visited a farm at Beach Grove, about twelve miles distant from Honesdale, Pa. Smoke and flames prevented the farm hands from getting the cows out.

Chief George Kinsman arrived with a pumper. He ordered a chemical truck and later ordered another pumper. Hose was stretched through a field to a lake, a distance of 1,100 feet.

Although a barn 130 x 37 feet, two silos, 180 tons of ensilage, 105 tons of hay and 750 bushels of oats, and fifty-four heads of registered Jersey cows were destroyed, the firemen succeeded in saving two large houses, the garage and kennel. Water was played on the fire from 9 a.m. to 6 p.m. A wind of about thirty miles an hour helped to spread the fire. The heat was so intense, it set fire to trees six hundred feet away.

It was one of the biggest fires in the section for many years.

RAYMOND A. SMITH.

Virginia Chiefs to Meet in August

The tenth annual convention of the Virginia Fire Chiefs' Association is to be held at Luray, Va., on August 9 and 10. At the last convention a law was drafted governing the sale of fireworks to be presented to the next legislature.

"We's Won de Mug But We's Smashed de Ole Machine."

Another incident in the eventful history of the Darktown Fire Brigade is used as the picture for the calendar of the Elkhart Brass Manufacturing Company, Elkhart, Ind. The picture is a reproduction of a Currier and Ives print.

FAIRFIELD COUNTY FIRE CHIEFS' PLAN LOOKS AHEAD FOR A FIVE-YEAR SERVICE

Plans Made for a "Five Year" Drive to Improve Conditions in the Service in Connecticut and to Obtain Favorable Legislation to That Effect

By John Moehring

Secretary, Fairfield County Fire Chiefs' Emergency Plan, Captain, Stamford, Conn., Fire Department

ABOUT five years ago, on May 9, 1933, to be exact, the first Fire Chiefs' Emergency Plan in Connecticut was organized in Fairfield County—a healthy, energetic offspring of its parent organization, the Westchester County Fire Chiefs' Emergency Plan. During these five years, the first two of which were naturally spent in getting organized, the Plan has built its original membership of 23 to 183. During the past twelve months, the Plan has endeavored to spread its ideas into bordering counties and in March, 1937, a New Haven County Plan took its place beside its two predecessors and later in the year, in November, Litchfield County became the third Connecticut Emergency Plan. Through these organizations, all bound together with mutual ties, Southern New England has been united from the New York City boundary to New Haven, Torrington and the Massachusetts State line.

What the "Emergency Plans" Accomplish

Why these Emergency Plans? Without attempting to list them in the order of importance, here are the main reasons why, in the past five years, Connecticut has had three counties organized into an Emergency Plan. 1. A desire to eliminate unnecessary runs for apparatus to insignificant fires, probably into another department's territory, by a planned "Mutual Aid" with a secret "code word." 2. The educational meetings held once a month in various towns in the county, which are not only educational to volunteer Chiefs and officers, but make the officers acquainted, so that in case of an emergency no "introductions" are necessary. 3. The cooperation brought about by the mixing of the paid and volunteer companies, as well as the wealth of material and knowledge gained by volunteer officers from their paid members. 4. The ideas, both from a firemanic and legislative viewpoint, which are developed at these meetings.

During these fifty-odd months that our Plan has been organized, the Plan has been successful in some ventures and unsuccessful in others. However, through the cooperation of the two new organizations in New Haven and Litchfield Counties, as well as from the other county organizations, the Chiefs' Club and the Firemen's Association, we have high hopes for better firemen's legislation in the future.

Fire Department Automobile Plates

Last year the Plan, through an idea brought to the floor of one of its meetings, obtained the consent of the Motor Vehicle Commissioner and through his cooperation had 750 auto license plates registered under the "FC" prefix, which has in many cases been of valuable aid, especially in the smaller towns, for firemen going to fires, to identify themselves as "smoke eaters." Although not a complete success (999 were available) —it was a start, which will be made 100 per cent perfect when new plates are issued four years from now. (The State has a new law which makes auto plates last five years instead of one.)

Tabulation of All Fire Laws in Connecticut

The Plan, two years ago, printed a 65-page book, through the cooperation of the Legal Division of the WPA of all the state laws relative to firemen, their duties, etc., and the laws pertaining to apartment house inspection, motion picture theatre laws, etc.; in fact every law that has ever been voted through the legislature, which concerns the firemen or Fire Departments. This put quite a hole in the treasury, but its results will never be questioned.

The Two Per Cent Insurance Law

The two per cent insurance tax, which is collected in Connecticut and turned into the General Funds, has been a target of the Plan for the past four years. Firemen in Connecticut are well aware of our battle in this case. Defeated in Greenwich, in 1936, at the State Firemen's Association Convention by the vote of 88-33, to increase the firemen's benefits from $2 a day for six days a week to $3 a day for seven, to get a bigger cut out of the $169,000 received annually by the State of Connecticut, from a tax on out-of-state and foreign country insurance companies, the same resolution, with a minor change, was passed by the 1937 convention at Derby by almost a unanimous vote, due to the 100 per cent cooperation of the other counties in the State. The only change in the resolution was that it would not go into effect until the additional appropriation from the State was received to take care of the increased benefits. The minority used this argument in 1936 to defeat it, claiming that it would bankrupt the Association. This year, they asked the question: "Where will the State get the additional money to pay the increased benefits?" That question has been already answered in the daily newspapers during the past few months. The high prices paid for land for the new Merritt Parkway, which was 25 times more than the assessment value of the property, and ran 15 times as much as a private utility company was paying for adjoining land for a reservoir, shows that the State can find the money when they want to, and also shows *that the firemen can go out and get more money if they unite.* That is what the Emergency Plans in Connecticut are trying to do. Our firemen in this State, as has been shown in an article printed in FIRE ENGINEERING, receive one fifth of the benefits that the firemen in New York State do.

Defeat of the Drivers' Liability Bill

We unsuccessfully fostered a bill in the state legislature, called the Driver's

Fire Department Makes it Possible for the Medical Service to go Through

Three ill persons that were rushed from Eggertsville, N. Y., to a Buffalo hospital when roads were almost impassable, owe a debt of gratitude to the local Fire Department. A fire truck preceded the ambulance on the snow covered and wind-swept roads and made it possible for the ambulance to go through. Snow drifts as high as fifteen feet were reported from that area following a severe blizzard

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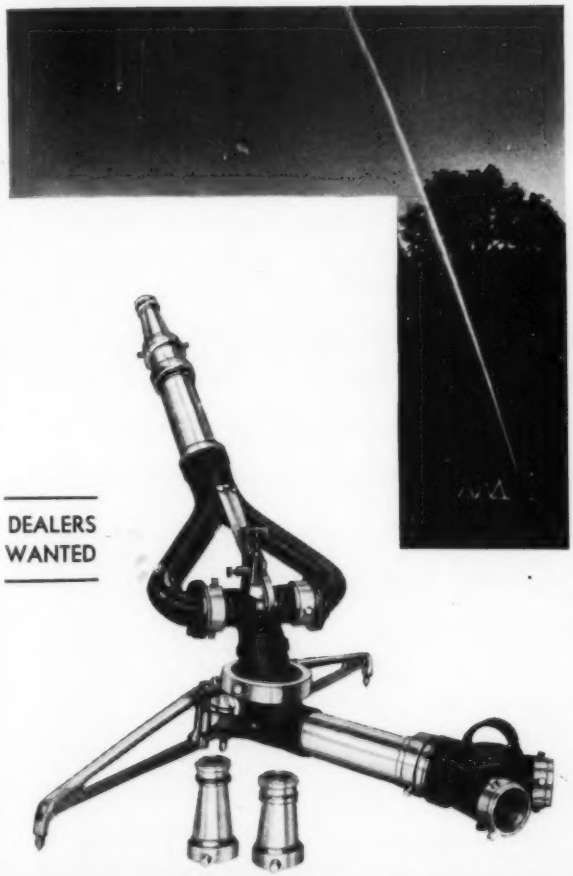

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MINIMUM FRICTION LOSS
SAFE—FLEXIBLE—COMPACT

Far ahead of others, the Eastman and Eastman-Barker DELUGE GUNS offer these outstanding qualities:

Compactness for Mounting on Apparatus
Flexibility for Quick Placing in position
Ease in Manipulation of Volume Streams
Delivery of Far-Reaching, Solid Streams

Our new Universal Joint permits the stream to be directed with machine gun accuracy, very easily, on roller bearings. The same level of stream is maintained as barrel is revolved. And now a new low level, with complete safety, is possible. Send for full details.

Manufactured by

SAMUEL EASTMAN CO.
CONCORD, NEW HAMPSHIRE

USE MILK ON FIRE
CASTLETON, Vt., — While a bucket brigade used milk in lieu of water, fire destroyed a barn on the farm of Orlando Coolidge, cousin of the late President, yesterday. There was no water available.

INDIANS WOULD HAVE SAVED BOTH MILK AND BARN

Roof, awning, rubbish, building and grass fires are quickly extinguished with INDIAN FIRE PUMPS. INDIANS are the most efficient, economical and fastest fire fighters made. The curved metal tank holds 5 gallons of clear water and unsurpassed for Fire Departments.

INDIANA CHIEF SAYS:

Our INDIANS have not only been particularly valuable in thick brush fires, but also in numerous small house fires. We find they do a much cleaner job and are easier to transport than the 2½ gallon soda and acid extinguisher. We are well satisfied with our INDIANS and believe that every Fire Department should have them as part of standard equipment.

G. M. EBERHARDT, Oakhurst, Ind. Hose Co.

Positive and fast in action, INDIAN FIRE PUMPS frequently save laying a single foot of hose. Think what this means! A saving in time, effort and money. Three or four men sling tanks on their backs and get after the fire in a hurry. Only clear water used—no chemicals.

Here is the outfit which more and more fire departments are relying on for fires of every description. INDIANS are the all purpose fire pumps. Brass pump throws strong 50 ft. fire stream that literally smothers the fire. Carrying racks for trucks hold pumps firmly in place. May be kept filled continually—will not rust or corrode.

Anyone connected with Fire Protection should be familiar with INDIANS — return the coupon for catalog and testimonials.

INDIAN FIRE PUMP

D. B. Smith & Co., 406 Main St., Utica, N. Y.
Send full information on your INDIAN FIRE PUMPS.

NAME .....
ADDRESS .....
CITY ..... STATE .....

A CHAT WITH FIRE ENGINEERS ABOUT WATERFOG

OWING to the increased interest in extinguishing fires with WATERFOG and the success with which it is meeting in actual practice, we believe you will welcome this discussion.

There is considerable yet to be learned about breaking up water and the application of WATERFOG in fire extinguishment—a method which is destined to play a major role in the future.

For ten years our engineers have worked in perfecting this method. Their experiments revealed definite fundamental principles, which, if not followed, will fail to produce the desired results.

Tests by insurance laboratories who have approved our type of fire extinguishment, as well as tests made with our equipment by the United States Government, confirm the findings of our engineering department.

There is nothing about the USE of fog in fighting or protecting against fire, that is difficult or intricate, *providing* the extinguishing agent is real WATERFOG. It is this point which is of vital importance.

Our engineers point out that the finer water is broken up, the more efficient it is. As is well known, all fires are *vapor* fires. The fog method of extinguishing fires is to dilute and cool the burning vapors to the point where they are too lean to burn and to do so as quickly as possible with a minimum of water consumption.

In other words, to rapidly increase the humidity in the vapors so that combustion ceases. The condition which makes for speed is the minuteness of the water particles.

Therefore, the first principle is: The finer water is broken up, the quicker the extinguishment.

Were this not so there would be no point to breaking up water at all.

The scientific reason that this is true is that it is only the outside surface of water that absorbs heat. As a unit of water is divided, the outside surface is enormously increased with geometrical progression. The finer it is broken up, the greater the surface. The ultimate of this we call "humidity."

Then when this humid mass is applied to heat, the finer it is the more quickly it will absorb heat and turn to steam.

Steam at normal atmospheric pressure is water expanded 1700 times. Therefore, Griswold FOGNOZLS not only create millions of minute water particles we call WATERFOG but the heat expands this WATERFOG and thus the fire has aided in bringing about its own destruction. Simple, isn't it?

The principle on which Griswold FOGNOZLS operate is very unique. First, there are no moving parts to wear or get out of order. The water is broken up by means of a "cracking process." That is, there are pairs of high-velocity streams of water which impinge just *outside* the nozzle. This action creates a fog that is characteristically and chemically like dense natural fog.

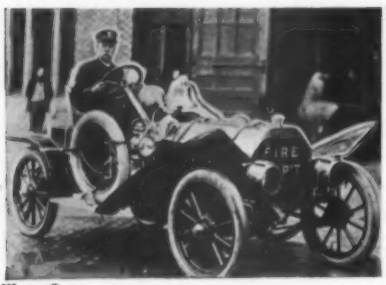
Second, Griswold FOGNOZLS break up water finer than by any other known means whether the water-pressure is one pound or one hundred fifty pounds.

The fact that Griswold FOGNOZLS create WATERFOG outside the nozzle is a second principle that will be discussed in the next issue of Fire Engineering. In addition to this very important subject the discussion will include an explanation of how fire, in another manner, aids in its own destruction when the Griswold FOGNOZLS are used.

In the meantime, we will, upon your request, send you, without any obligation, "The Story of Man-Made Fog."

THE FOG NOZZLE CO.

1520 E. SLAUSON AVE. LOS ANGELES, CALIF.



Chiefs rode this way in 1907. Do your men ride this way today?

THE **MORROW**

CAB FRONT WINDSHIELD

helps you reach the fire in bad weather and your men are fit to go to work when they arrive.

$110 F.O.B. DETROIT

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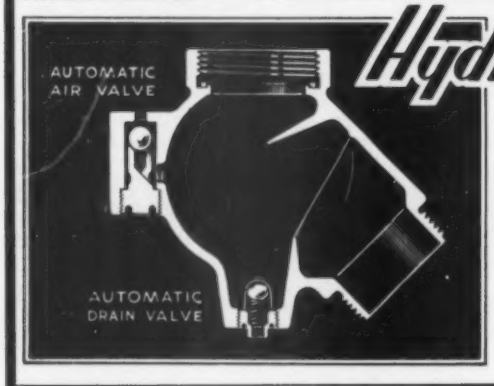
Available for any apparatus. Installed in 2 to 4 hours.



Hydrolator

The HYDROLATOR is a device that will automatically permit the escape of water resulting from leaky stand pipe valves.

To Prevent Rot Keep Fire Hose Dry

APOLLO MAGNETO CORPORATION, Kingston, N. Y.

Sole Manufacturers

Liability Bill, which turned out to be another Bill named "Joe" when the lobbyists at Hartford had passed judgment on it. A reprint of the letter sent to Senator Scranton by the author of the bill, will be self-explanatory:

"DEAR SENATOR:

"I have a letter from Capt. John Moehring, Secretary of the Fairfield County Fire Chiefs' Emergency Plan, in which he says that he and Chief George Brencher, our County Vice-President of the State Firemen's Association, were in Woodstock last Thursday evening (November 19) and had a talk with you concerning what we call the Driver's Liability Bill, which passed the Senate, but was tabled in the House at the end of the session. He said that you seemed to be under the impression that we of the Fairfield County Fire Chiefs' Plan introduced the Bill in the form it passed the Senate. That impression is not correct.

"I want you to get this exactly straight. We worked hard on that matter and we felt it very keenly when we had to go up to Hartford to find out who pulled the insides out of our Bill, and made it over into something else again. I drafted the original Bill, which was sponsored by our Plan. I gave it to Senator Cable of this District (Danbury) to introduce in the Senate. I, along with other members of the Plan, firemen from other counties, and officers of the State Firemen's Association, appeared before the Committee on Judiciary, to which the Bill was referred. From that time on until nearly the end of the session of the Legislature I heard nothing but favorable reports on the Bill and confidently expected that it would pass. During the last few days of the session I learned that a Bill was substituted for our original draft and had passed the Senate. I immediately got in touch by telephone with Senator Cable and asked him if it was true that the Bill, reported out by the Hartford Courant, was a substitution for our Bill. He said that was correct. I told him the Bill as passed was terrible and we didn't want it at all. He procured for me a copy of the Bill that passed and I went to Hardford with him the next day of the session. I took it up with Mr. King, the drafting Clerk, I believe, of the Senate. . . .

"I labored with Clerk King to draft another Section into the Bill, so as to get it back into its original purpose, but after conferring with others interested in the original Bill, we decided it was too late to get the amendment before the end of the session. We therefore decided to kill it by having it tabled in the House.

"Now here is the original Bill of which I have a photostat copy:

"'State of Connecticut

"'General Assembly,
January Session,
A.D. 1937.

"'An Act Concerning Municipal Liability for Negligent Operation of Certain Vehicles in the Performance of Duty by Firemen and Policemen:

"'*Be It Enacted by the Senate and House of Representatives in General Assembly Convened*:

"'Every city and town shall be liable for, and shall assume the liability to the extent that it shall save harmless any policeman, fireman or volunteer firemen for the negligence of such policeman or fireman in the operation of police cars or fire apparatus upon public or private ways of such city or town, provided the policeman or fireman at the time of the accident, injury or damages complained of was acting in the performance of his duty and within the scope of his employment or service.

"'No action instituted pursuant to the provisions of this section shall be prosecuted or maintained against any city or town and policemen and firemen until after a thirty day written demand upon the Treasurer of said city or town and his neglect or refusal to pay said claim within said time, nor shall said action be maintained against said city or town and policemen and firemen unless such action shall be commenced within one year after the cause of action therefor shall have accrued.'

"'S. B. 345 Judiciary.'

"Now, for contrast. Do you see anything in the above Bill requiring Fire Companies to take out $15,000 policies from insurance companies? Do you see anything in the above Bill making the driver of a fire apparatus subject to a fine of $50 for driving an apparatus which hasn't got any of these $15,000 policies? Of course, you don't. The above Bill was drawn for the protection of drivers and placing the responsibility exactly where it belongs. It was not drawn for the benefit of insurance companies. I will not go into the phraseology of the Bill which was substituted for ours, but the gist of it was that it required fire companies to take out $15,000 liability and property damage policies which were 'non-cancellable' to use a word of the Bill before they could venture out on the highway to put out a fire and a fireman driving a fire apparatus to a fire without one of these precious $15,000 policies, was subject to a fine of $50. The payment of the premium on this $15,000 policy would wipe out the due bill of most volunteer companies. When we found the insurance companies had stolen a march on us with their substitute, we went up there to head it off or kill it, and we did it. Now that is the whole story. The Bill that passed the Senate was *not* our Bill at all, but we are not through fighting yet. We are going to keep going up to Hartford until we get what we want, which is nothing more than simple justice for the drivers.

"At the present time, if a fireman is driving to a fire and the machine slews and hits something, he is liable, not the city that employs him, which escapes on the ground of governmental immunity. When he arrives at a fire his fortune rides with him. He may arrive in time to put out the fire and come back to the fire house to find himself facing a law suit and his little home and everything he has, attached. This is no joke. It is the cold facts under the present law of the State of Connecticut. The act which our Plan sponsored is modeled after the New York State law and several other neighboring States have a similar law.

"I am sorry it has taken so many words to explain this situation, but I wanted to be sure that you got it straight and from the one who fathered the original Bill.

"Thanking you for your interest and hoping I may see you at some future meeting of the Legislature or the Plan, I remain,

"Very truly yours,
"GRANVILLE STUBBS."

In those five years, we have had five live-wire Presidents, one paid Chief and three volunteer Chiefs, as well as an investigator for the Board of Fire Underwriters.

The Second Five Year Plan

Here is our Second Five Year Plan:

1. To take appropriate measures to secure the additional appropriation from the State necessary to secure benefits of $3 per day for seven days a week.
2. To again submit the Driver's Liability Bill to the Connecticut Legislature for passage.
3. To work actively for the formation of a Firemen's Home in Connecticut, using a portion of the Foreign Insurance Companies' two per cent fund to found said Home, possibly working with the State of Rhode Island for a Joint Home.
4. To take measures to adjust the benefits received by Connecticut Firemen besides the daily benefits, such as orphan benefits, death benefits, etc.
5. To act in conjunction with New York, Massachusetts and Rhode Island fire companies in passing State laws, which will protect companies going and returning from fires across the State line, both for property damage to equipment and injuries received by firemen.
6. To work for the appointment of a paid counsel to protect the interests of Connecticut firemen, both paid and volunteer, at Hartford, who will act as a clearing house of all Bills beneficial to firemen and who will collect these Bills from each county and state organization, picking the best Bill of them all, which relate to the same idea, and working for the passage of said Bill through the legislature and the Governor's signature at Hartford.

Our county and all three Emergency Plans are looking for the cooperation of all Fire Department organizations in the State during the next few years and at the same time are offering their services and their cooperation to the other organizations for worthwhile projects.

Mt. Holly, N. J., Has First Aid Squad

The America Emergency Squad has been organized at Mt. Holly, N. J. Members of the squad have completed the standard and the advanced courses of first aid as offered by the American Red Cross, and they are now out to raise funds for the purchase of an ambulance. In the photograph are (kneeling) James Anderson, (front row), Thomas Bryant, Aurile Myers, Earl Arey, Everett Carmelia, Elwood Sleeper and Charles Taylor, (back row), Melvin Bates, George Smith, Kenneth Shinn, Raymond Evan, William Bedwell and Howard Nixon.

Brown, Chief of Birmingham

R. A. Brown, veteran of thirty-five years in the service, has been named Chief of the Birmingham, Ala., Fire De-

Chief R. A. Brown

partment, succeeding B. O. Hargrove, who had headed the department since 1933.

Chief Brown, who was born in Norwich, England, came to the Fire Department by way of the United States Army, where he served as a volunteer during the Spanish-American War and as a Coast Artilleryman in the regulars until 1902.

Coming to Birmingham shortly after his discharge, he joined the Fire Department in June of 1902. Since then he has won steady promotion.

He waited four years for his first promotion. He was elevated to the rank of Captain in 1906 and remained a Captain until 1921. From then on his promotion was rapid—Batallion Chief in 1921; Second Assistant Chief in 1924 and moved up to First Assistant Chief three months later.

Chief Brown is perhaps the only fireman in the South who can claim the unique distinction of having frozen his hands while fighting a fire in a Southern April! It occurred when a hose connection to a carbon dioxide tank broke, allowing the gas, escaping at a temperature of 110 degrees below zero, to come in contact with his hands while he tried to repair the connection.

Former Chief Hargrove, under the civil service rules of the department, reverts to the rank of Second Assistant Chief, the rank he held when promoted to Chief.

Chief Hargrove, who is eligible for retirement, is taking a two weeks' vacation to consider whether he will retire now on a Chief's retirement pay or continue as Second Assistant Chief and accept the lower retirement pay of a Second Assistant, when he is ready to retire.

Commissioner Eugene Connor, head of the Department of Public Safety, in announcing Chief Brown's promotion, took the occasion to praise former Chief Hargrove for his efficiency as a fire fighter. Birmingham's fire rate dropped remarkably during his administration.

WILLIAM M. HINDS.

FIRE APPARATUS BUDGETS FOR 1938 SHOW INCREASE OF TWENTY PER CENT

Unless Unforeseen Developments Result in Subsequent Curtailment, Fire Apparatus and Equipment Makers Should Enjoy Improved Business This Year

FIGURES secured through a survey made among a representative group of cities large and small from New York to California and from Minnesota to Louisiana, indicate that Fire Department budgets for new apparatus and supplies for 1938 will be approximately 20 per cent ahead of those of 1937.

While the number of cities furnishing complete information in this survey totalled but 28, they are located in 25 states and hence represent a very good cross-section of the country.

The totals of the figures furnished on fire apparatus and equipment budgets by the 28 cities follow:

1937 apparatus and equipment budget, $1,336,131;

1938 apparatus and equipment budget, $1,597,762;

Increase of 1938 over 1937, $261,631.

This increase represents a gain of approximately 20 per cent.

Cities included in the survey are located in the following twenty-five states: California, Connecticut, Colorado, Delaware, Florida, Georgia, Iowa, Indiana, Louisiana, Massachusetts, Michigan, Maryland, Minnesota, New Jersey, New York, Oklahoma, Pennsylvania, Rhode Island, Texas, Tennessee, Utah, Virginia, West Virginia, Wisconsin and Washington.

Decatur Exhibits Equipment

Officials of Pittsburgh, Pa., paid a visit to Decatur, Ill., to inspect the apparatus and fire equipment in that city. They inspected the sedan type pumper, the aluminum ladders and the two-way radio, through the courtesy of Commissioner Ralph G. Long. The visitors also made inspection of apparatus in Chicago and Detroit.

Salvage Corps for Houston

Chief Jasper Davidson, Houston, Tex., has submitted a budget which is $223,572 higher than that for the previous year.

Chief Davidson said that the most important item requested was funds for a salvage company. He said such a company would need apparatus and equipment that will cost $4,000. He also asked for a new 750-gallon pumper to replace one of 350-gallon capacity.

N. Y. Commissioner in Charge of Fire Prevention

In accordance with the provisions of the new charter for New York City, the responsibility for fire prevention, and the approval and maintenance of all fire extinguishing systems and interior fire alarm systems is vested in the Fire Commissioner.

The Battalion Chiefs of the New York Fire Department were directed to report the locations of all extra-hazardous conditions. These reports will be made the basis of the issuance of corrective orders.

Pittsburgh Officials Inspect Sedan Pumper of Decatur

Left to right, Chief Nick Phelan, Pittsburgh; Henry J. Yute, Director of Supplies, Pittsburgh; Commissioner Ralph G. Long, Decatur; George J. Schill, Superintendent of Equipment, Pittsburgh; and Chief William Platt, Decatur.

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3. Long rolling action after current is cut off more than two minutes —that saves your battery.
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5. Economical, Streamlined, Precision Built. Absolutely a new siren.

Be sure to Specify a Federal "77" Doubletone Siren on your new equipment.

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FREE TO FIRE CHIEFS

Fire chiefs who are seeking increased appropriations for more fire alarm boxes or fire fighting equipment may help their cause by furnishing the Mayor of their city a copy of

"INFLATION AND FIRE CHIEFS"

by ROGER W. BABSON as it appeared in FIRE ENGINEERING for February, 1937. Copies will be sent free to any chief who writes:

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By ROGER W. BABSON, *President*
Babson Park, Mass.

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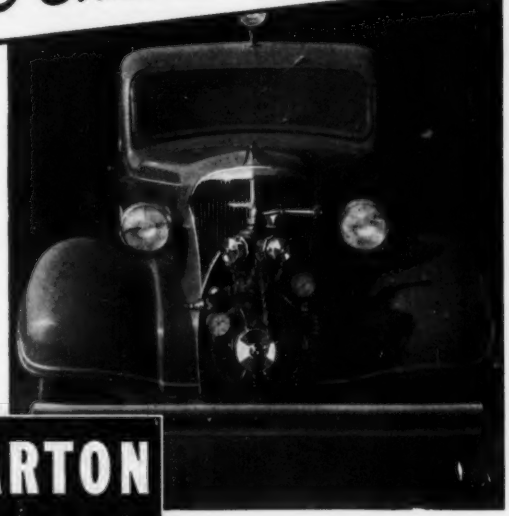

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PLAN TO INCLUDE BETTER FIRE PROTECTION IN YOUR 1938 BUDGET . . . . .

Now is the time when most cities, towns and villages are considering 1938 expenditures—making up annual budgets. An ideal time for you to get money appropriated for better fire apparatus—before that money is spent for less important things.

And thousands of Chiefs have found it easy to sell the "powers that be" on Barton Fire Pumps. Nor is it hard to understand why, for Barton Pumps enable you to have the FINEST, MOST DEPENDABLE of fire-pumping equipment, YET SAVE YOUR COMMUNITY HUNDREDS OF DOLLARS IN FIRST COST.

Real Economy With BARTON Pumps

First, because of simplified design, a Barton Centrifugal Pump costs MUCH LESS than other type apparatus. Second, because of Front-Mounting, a special expensive fire truck is NOT REQUIRED. Any size Barton Pump can be used on a standard truck and completely installed WITHOUT A SINGLE CHASSIS CHANGE—total cost but a few dollars for labor.

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Pressure range to 300 lbs. Capacity 1,000 gallons per minute! Also High Pressure Valves up to 600 lbs. pressure, of 1,400 gallons per minute capacity!

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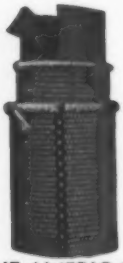

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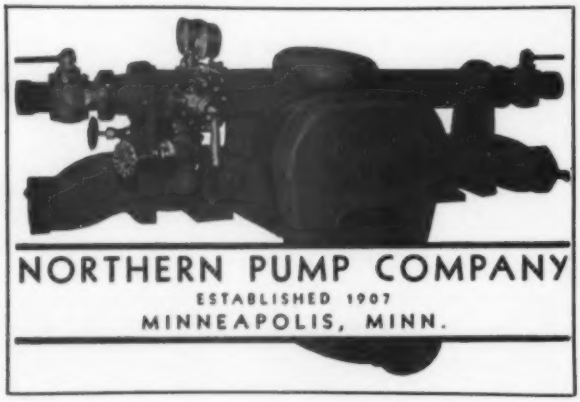

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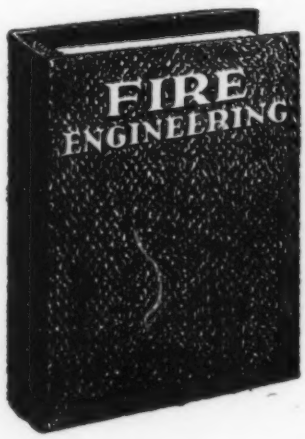

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Gamewell Brigade to Answer Newton Calls

Mayor Edwin O. Childs, Newton, Mass., at a luncheon given December 6 at the Braeburn Country Club in honor of the Gamewell Company Fire Brigade, commended the spirit which inspired corporations to foster the organization of a fire brigade and to place this trained fire-fighting force at the service of their cities or towns in the event of a fire emergency.

Arrangements have been made whereby Chief Clarence R. Randlett, Newton Fire Department, will call the Gamewell Brigade to all three-alarm fires, thereby giving the city the benefit of a supplementary, fully trained and fully equipped fire-fighting force. The Mayor emphasized the need of all companies organizing fire brigades, in order to protect the continuity of employment of their people and, in so doing, serve the community as a whole. He pointed out that fire disasters in industrial establishments are definitely reflected throughout the community by reason of loss of employment, loss of taxable valuations, reduction of community purchasing power, and injuries to and possible loss of life of employees. Chief Randlett also addressed the Fire Brigade and formally established their status as ex-officio members of the Newton City Fire Department.

The Gamewell Company Fire Brigade is a volunteer fire fighting company, made up entirely of Gamewell employees, and equipped in accordance with the recognized practices and requirements. It is organized in two squads, operating under the direction of a Chief and a Deputy Chief, and especially trained in fire fighting and salvage work.

This fire brigade is Gamewell's first line of defense against fire, pending the arrival of the Newton Fire Department. The Gamewell Company, during its seventy-one years of existence, has had an enviable fire record—only two small fires, both extinguished with nominal loss. The management, however, is keenly alive to the necessity for maintaining the most approved fire prevention and extinguishing methods and equipment.

At the conclusion of the luncheon, Fire Chief Dunn was presented with his Chief's badge by Mayor Childs and Deputy Chief Ritchel was presented with his Deputy's badge by Fire Chief Randlett. Chief Dunn was recently appointed Safety Director of the Gamewell organization and is also a member of the New England Fire Chiefs Association.

HARRY BELKNAP.

Presentation of Chiefs' Badges at Luncheon

Mayor Edwin O. Childs and Chief Clarence R. Randlett, Newton, Mass., present badges to Guilford T. Dunn, Chief, Gamewell Fire Brigade, and to F. N. Ritschel, Deputy Chief of the private brigade.

Rhode Island Chiefs Meet

Chief Daniel A. Nichols, Barrington, R. I., was host to the Fire Chiefs' Club of Rhode Island on December 9, when the club held its regular meeting in the Barrington Fire Hall. Frank Charlesworth, State Fire Marshal, presided.

He presented Chief Nichols with an honorary life membership as a mark of the host's conspicuous fire service, from which he will soon retire, after serving as Chief for twenty-one years.

H. K. Bennett gave an address on highway safety. The club voted to endorse the state's campaign for greater care in operation of automobiles on the public highways.

President Charlesworth urged members to send him suggestions for new legislation, that they might be considered at the coming session of the General Assembly.

Sound motion pictures were shown on the progress of the telephone and radio broadcasting.

The next meeting of the club will be held in Warwick, as guest of the Commicut Volunteer Fire Company No. 1. At this meeting there will be election of officers.

A. ROBERT BLACK.

Commissioner McLaughlin, Boston, Resigns

Under date of December 31, 1937, Fire Commissioner Edward F. McLaughlin, of Boston, Mass., resigned his position in the following letter addressed to Mayor-elect Maurice J. Tobin.

"I hereby tender my resignation as Fire Commissioner of the City of Boston, to take effect January 3, 1938.

"In tendering this resignation, I assure you of my very best wishes for a most contented and successful administration of the affairs of our city.

"It is my sincere hope that whoever may be honored with the position of executive head of the Fire Department, will meet with the same degree of loyalty and devotion to duty by these heroic men as it has been my good fortune to experience during the past eight years, the resultant of which, from the standpoint of morale and efficiency, has made this department one of the outstanding fire organizations of our country."

Edward F. McLaughlin

Mayor Tobin accepted Mr. McLaughlin's resignation and appointed William Arthur Reilly as Fire Commissioner. Mr. Reilly was chairman of the Boston School Committee in 1933 and 1934 and also served on the Finance Commission.

HARRY BELKNAP.

Plans Made for South Dakota School and Convention

The Board of Control of the South Dakota Firemen's Association and Fire School held a meeting at Mobridge, S. D., on December 6 and 7, 1937, and arranged to hold the 54th annual convention and fire school in that city on May 30 to June 3, 1938. It is planned to devote the forenoons of Tuesday, Wednesday and Thursday, June 1 to 3, and part of the afternoons of Tuesday and Wednesday, to instructions on salvage, fire prevention, job analysis, ventilation, public relations, care of fire apparatus, hydraulics, first aid, ladder and hose demonstrations and evolutions in connection therewith. Thursday afternoon and Friday will be devoted to evolutions by competitive squads from various volunteer Fire Departments of South Dakota, with six major evolutions for teams of five to seven men, and minor evolutions for one and two men teams. Prizes ranging up to $200 for each evolution are to be given.

Pittsfield Has New Fire Alarm

Pittsfield, Mass., has placed its new fire alarm system in operation. The equipment is housed in a new fireproof building next to the Morningside station.

The new system is equipped to handle 135 fire alarm boxes, but can be extended to handle 250 boxes. The building was erected at a cost of $12,000, and the equipment represents an expenditure of $13,000.

There are two hundred batteries that are recharged automatically.

Mayor of Pittsfield Accepts New Equipment for City

At the left is John E. Grady, Superintendent of Fire Alarms and Police Signals, at the right, Chief Thomas F. Burke, and to the left of the Chief, Mayor Allen H. Bagg.

New England Chiefs Meet to Fix Convention Date

A meeting of officers and Directors of the New England Association of Fire Chiefs was held in the Parker House, Boston, Mass., on December 15.

Four places were under consideration for the 1938 convention, namely Pittsfield, Mass., "The Heart of the Berkshires"; Rutland, Vermont; the Poland Springs House in Maine; and The Balsams, Dixville Notch, N. H. No decision was reached as to date or locality; but a committee was appointed consisting of Chiefs John W. O'Hearn, Watertown, Mass.; Alfred H. Koltonski, Rutland, Vt.; A. J. Cote, Woonsocket, R. I.; and Thomas F. Burke, Pittsfield, Mass., with power to act.

Chief Joseph W. Randlette, Richmond, Me., President of the association, called the meeting to order. Those present, besides Chief Randlette, were Chiefs Oliver T. Sanborn, Portland, Me.; Charles H. French, Manchester, N. H.; Thomas F. Cavanaugh, Waterbury, Conn.; John W. O'Hearn, Watertown, Mass.; William C. Mahoney, Peabody, Mass.; Daniel B. Tierney, Arlington, Mass., President of the International Association of Fire Chiefs; Thomas F. Burke, Pittsfield, Mass.; Augustin J. Cote, Woonsocket, R. I.; Albert C. Melendy, Nashua, N. H.; William T. Happny, Concord, N. H.; Thomas F. Burns, Bridgeport, Conn.; Samuel J. Pope, Boston, Mass.; and A. H. Koltonski, Rutland, Vt.; Harry Belknap, Boston, press representative; and H. L. Farwell, Assistant Manager of the Poland Springs House.

Secretary O'Hearn reported the following deaths of members of the association since the last meeting: Chief Isaac M. Hubbard, Greenwich, Conn.; Chief Arthur W. Dugan, Vergennes, Vt.; Ex-Chief Thomas J. Lynch, Waterbury, Conn.; Chief Manuel S. Miguel, Manchester, Mass.; Ex-Chief E. W. S. Pickett, Fairfield, Conn.; District Chief James N. Dallagher, Fall River, Mass.; and Franklin W. Haines, Associate Member, Peabody, Mass.

HARRY BELKNAP.

New Station for East Haven

A special town meeting in East Haven, Conn., has authorized a bond issue of $50,000 for building and equipping a new fire headquarters building on Main Street. Residents of the second district, the shore section of East Haven, are seeking to have the town take over the present Bradford Manor fire house, which was wrecked by fire last September, build a new fire house on the present site, and equip it with modern apparatus.

THOMAS F. MAGNER.

Fire Department at Auction

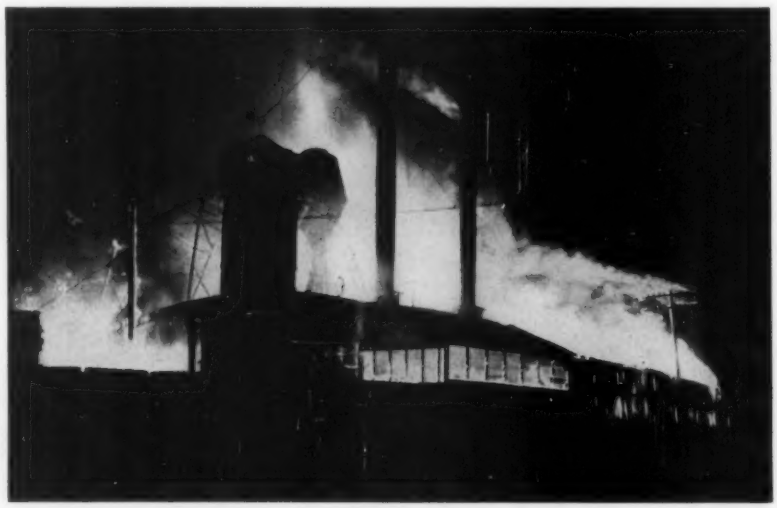
Many things have been offered at the auction block, but it is unusual for a Fire Department to end its existence in that way.

The department of New Munster, Wis., raised its own funds for the purchase of apparatus and equipment. It was given free use of ground for the erection of a fire house. This land was sold recently, and as the new owner wished to erect a building on the site of the fire house, the department had to find a new home. After considerable discussion on the subject, the firemen voted to have an auction sale of its equipment.

Hobby Proves Fatal

Charles V. Noel was a banker of Philadelphia, Pa., and also Chief of the Narberth Fire Department. For twenty-five years he followed his hobby of fighting fires. On the day after Christmas he died while on the way to Bryn Mawr Hospital. He had taken a hose line to the top of a stairway and had suffered a heart attack. He was fifty-five years old.

Mr. Noel was a graduate of the University of Pennsylvania, Secretary of the Narberth Council and President of the Republican Club of that borough. A widow survives.



Los Angeles Industrial Area Endangered

Fire menaced a section of the southwest industrial area of Los Angeles, Cal., when it caused a $200,000 loss to the Standard Battery Separator Company. Several firemen and spectators were endangered by repeated explosions of gas. Photograph shows the extent of the fire.

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100% Waterproof, Durable and Flexible, made of VANITEX, a special Acid-Proof, Soft, Pliable material, manufactured exclusively for MIDWESTERN. This is the only firemen's coat equipped with the Famous SAFETY SNAP that can be instantly fastened or unfastened with one hand, and will not catch on clothing. See one of these superior coats before buying any other. You'll pick MIDWESTERN!

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For Comfort, Durability and Economy there is no better buy than Globe Suits! Worn by thousands of firemen the country over. They are warm, roomy, good-looking and can stand the hardest wear and tear. Coats have a wide chest protector flap which keeps water out and warmth in. They are lined with either wool or light weight fabric and interlined with waterproof material. Pockets have patent stays to prevent sagging or tearing. Sleeves have warm wristers. Suits come in Black, Brown or White at same prices. Before ordering any garment, look at a Globe Suit.

No. 27B Coat..... **$8.50**
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No. 240 Coat..... **10.00**
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No. 24X Coat..... **11.00**
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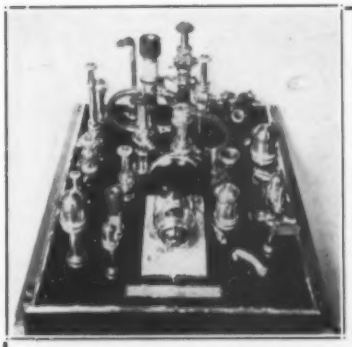
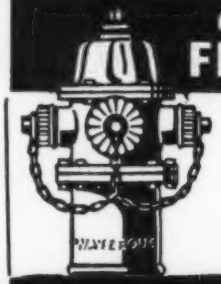


Display board mounted with a few of the more popular items of our large complete line.

Write for catalog. "When you look at a price look at the name that goes with it."

AKRON BRASS MFG. COMPANY, Inc.
WOOSTER, OHIO

WATEROUS
COMPRESSION
FIRE HYDRANTS



Waterous Dependable
ESTABLISHED 1886

WATEROUS COMPANY - ST. PAUL

The **SEALAND**
CORPORATION
FIRE CONTROL PRODUCTS

MOTOR FIRE APPARATUS
WATEROUS PUMPS
GARRISON ALARM SYSTEMS
Automatic — Supervisory — Manual

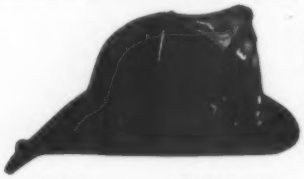
544 IRANISTAN AVENUE
BRIDGEPORT, CONNECTICUT

THE modern pumping engine has many advantages, including better and more powerful motors—better transmissions—better axles—four-wheel brakes—better engineering and, finally, better pumps—far better if it carries a Hale pump.

HALE FIRE PUMPS CONSHOHOCKEN

HALE FIRE PUMP CO., Inc.
CONSHOHOCKEN, PA.

CAIRNS LOW HEAD—CUSHION LINED **HELMET**



COMFORTABLE AS YOUR OLD FELT HAT; WON'T SHAKE OFF

Never go to a fire without the protection of a good helmet. It may save your life.

DESIGN - - MATERIALS - - CONSTRUCTION
ALL PROVED RIGHT BY YEARS OF ACTUAL USE

Ask for Catalog 229

CAIRNS & BROTHER
444 LAFAYETTE STREET - Established 1836 - NEW YORK

You'll Feel
A HEAP SAFER
with
COVER'S DUPOR
CHARCOAL
RESPIRATOR

$48 Dozen
Sample: $4 postpaid

H. S. COVER
Station A
South Bend, Indiana

U. S. Patent No. 2,065,304
Other Patents Pending

HEWITT-GUTTA PERCHA
FIRE HOSE

A complete line, including
Wax Treated - Solid Multiple Woven
AND
Single and Double Jacket Hose

Manufactured by
HEWITT RUBBER CORPORATION
BUFFALO, N. Y.
"Territories Available"

EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

Write for the Facts

EDDY VALVE CO.
Waterford, N. Y.
James B. Clow & Sons, Chicago Agents

Manufacturers' Announcements

Gamewell Calendar

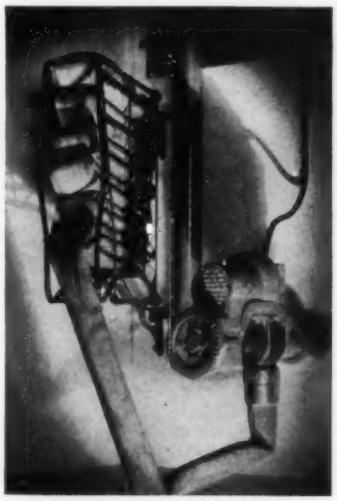
An attractive office calendar has been issued by the Gamewell Company, Newton Upper Falls, Mass. Each sheet shows the current month, the previous month, and the month to come.

Fire Department Records

The Eureka Fire Hose Division of the United States Rubber Products, New York City, is distributing gratis a book for keeping records of fires. The daily fire report spreads across two pages and the headings of the various columns are shown in the illustration. The book has spaces for reporting about 250 fires.

Remote Control Hose Valve

A remote control hose valve has been developed by the Rockwood Sprinkler Company, 38 Harlow Street, Worcester, Mass. It is supplied in two types, to work through a break-glass station or through a full turn operation of the wheel. In either case, an impulse is transmitted, and the valve operates instantly.



Remote Control Hose Valve

The company states that where there is danger of freezing, the use of this valve eliminates the necessity for insulating the piping.

The new control valve is used in conjunction with a special main valve, which controls the flow of water from the city water mains. The main valve is located at a point where there is heat throughout the year. The piping between the main valve and the remote control hose valve is normally empty.

Capt. J. H. Tague Dead

Captain John H. Tague, head of the Bureau of Fire Prevention, Bridgeport, Conn., for the past 20 years, and one of the leading authorities on fire prevention in New England, died at his home on December 14 following a short illness. He was 69 years of age.

The Late John H. Tague
From a photograph taken some years ago.

On July 16, 1917, Captain Tague resigned as a member of the Fire Commission at Bridgeport and was immediately appointed a fire Captain and placed in charge of the then newly organized Bureau of Fire Prevention. Since his appointment he made a thorough study of the intricacies of fire prevention work and electric hazards.

He was the author of several articles on fire prevention and was a speaker of note. He was a member of the International Association of Electrical Inspectors, the Connecticut State Firemen's Association and a director of the Bridgeport Firemen's Sick Benefit Association.

Speaking editorially on Captain Tague's death the Bridgeport Times-Star said in part:

"As head of the Fire Prevention Bureau since its organization 20 years ago, Captain Tague probably deserves credit—more than any one individual—for the excellent record on fire losses of which the city can boast.

"His persistent efforts toward the elimination of the causes of fire, the intelligent manner in which his bureau undertook to educate the public to a realization of the perils of carelessness and thoughtlessness, and his efficiency in his work of inspection all played their part—not spectacular to be sure—in making the city's fire loss record what it is today. The work of this Bureau has been a convincing demonstration of the truth of the old adage about "an ounce of prevention." Captain Tague's death leaves an important post vacant."

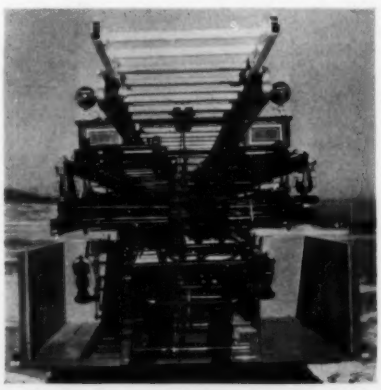
THOMAS F. MAGNER.

Volunteers Taken Off Civil Service List

For some time, the personnel of the Lorain, Ohio, Fire Department consisted of paid firemen and callmen. At a recent meeting of the Civil Service Commission, it was voted to remove the volunteer firemen from the civil service classified lists. It will mean that a regular paid firemean could be appointed from the city at large, and the appointment would not be confined to one from the volunteer ranks. It was felt that the city has outgrown the volunteer system.

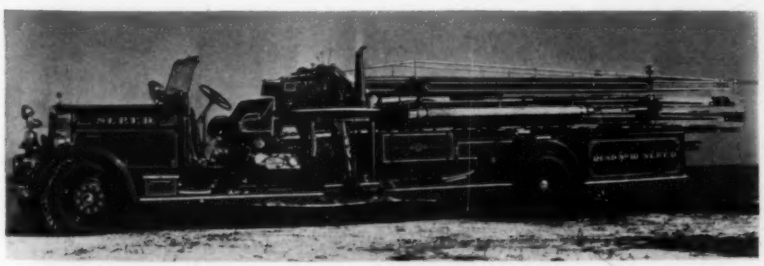
Vermont Firemen Plan Convention in August

Plans are already under way, according to Secretary-Treasurer W. H. Adams, of the Vermont State Firemen's Association, to hold what is hoped to be the largest annual convention of the body next August. It will be the forty-ninth meeting of the association, and as the location at Poultney, Vt., will be convenient for them, it is expected that members from many Fire Departments in Eastern New York State will attend. The contests which will be held, with the exception of those carrying prizes for the Vermont departments, will be open to all visiting teams.



Aerial Ladder Delivered to St. Paul

A Pirsch Intermediate hydro-mechanical aerial hoist with a fifty-five-foot ladder and regulation ground ladder equipment has been delivered to St. Paul, Minn. The apparatus also has a 1,000 g.p.m. pump and a 100-gallon booster tank. Fire hose is carried in boxes on the side of the apparatus. Among other equipment carried is a Homelite generator.



CLASSIFIED ADVERTISING

Bids Wanted, For Sale and Help Wanted $5 *per inch. Position Wanted,* $2.50 *per inch.*

Agents Wanted

Agents wanted, to sell a high-grade line of Fire Department Supplies, and Fire Protection Equipment. Liberal Commissions paid. Give references, experience and territory you can cover. Address: Box 25, c/o FIRE ENGINEERING, 24 W. 40th st., New York.

CONVENTION DATES

Jan. 18—NEW HAVEN FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Milford, Conn. Secretary, Chief Edward Pracny, Wolcott, Conn.

Jan. 20—NEW JERSEY MUNICIPAL SIGNAL ASSOCIATION. Regular Bi-Monthly Meeting, Bayonne, N. J. Secretary, A. A. Sullivan, Fire Headquarters, Bayonne, N. J.

Jan. 22—SOUTHERN CALIFORNIA FIRE CHIEFS' CLUB. Semi-Annual Convention, Burbank, Cal. Secretary-Treasurer, Chief A. H. Lankford, Glendale, Cal.

Jan. 26—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Fire Headquarters, Stamford, Conn. Secretary, Captain John Moehring, Toms Road, Stamford, Conn.

Feb. 14—LITCHFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Washington, Conn. Secretary, Captain Wesley Billings, Thomaston, Conn.

Feb. 23—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Norwalk, Conn. Secretary, Captain John Moehring, Toms Road, Stamford, Conn.

March 14—LITCHFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting, Watertown, Conn. Secretary, Captain Wesley Billings, Thomaston, Conn.

March 23 — FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN. Regular Meeting. Trumbull, Conn. Secretary, Captain John Moehring, Toms Road, Stamford, Conn.

May—NEW MEXICO STATE FIREMEN'S ASSOCIATION. 16th Annual Convention and Fire School, Carlsbad, N. M., second or third week (Exact date to be decided later). Secretary-Treasurer, Theodore A. Rosenwald, P. O. Box 732, Albuquerque, N. M.

May 4-6—GEORGIA STATE FIRE COLLEGE. 4th Annual College. Atlanta, Ga., Director, Fire College, Harry Phillips, 166 Alabama St., Atlanta.

May 25—IOWA FIRE CHIEFS' ASSOCIATION. Annual Meeting, Ames, Ia. Secretary-Treasurer, L. R. Morris, Ames, Ia.

May 25-28—IOWA SHORT COURSE FOR FIREMEN. Annual State Fire School, Iowa State College, Ames. Director, Lindon J. Murphy, Iowa State College.

May 30-June 3—SOUTH DAKOTA FIREMEN'S ASSOCIATION. 54th Annual Convention and Fire School, Mobridge, S. D. Secretary, M. C. Sullivan, Parkston, S. D.

June—SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION. 33rd Annual Convention, Charleston, S. C. (Exact date to be decided later). Secretary-Treasurer, Paul E. Wilburn, Union, S. C.

June 13-15—MINNESOTA STATE FIRE DEPARTMENT ASSOCIATION. 66th Annual Convention. Wadena, Minn. Secretary, Fred Pfaender, New Ulm, Minn.

June 14-17—FIRE COLLEGE OF ILLINOIS. 14th Annual College, University of Illinois, Urbana. Director, L. H. Provine, University of Illinois.

June 15-17—MARYLAND STATE FIREMEN'S ASSOCIATION. 46th Annual Convention, Baltimore, Md. Secretary, George R. Lindsay, Hagerstown, Md.

June 15-18—WASHINGTON STATE FIRE CHIEFS' ASSOCIATION, STATE FIREMEN'S ASSOCIATION and STATE FIRE SCHOOL. Chiefs, 6th and Firemen's, 16th Annual Convention and 7th Annual Fire School, Wenatchee, Wash. (With a possibility of change of date to a week later.) Secretary, Chiefs, W. A. Groce, 716 Mohawk Bldg., Spokane; Firemen, Lyle J. Ficklin, Kalama, Wash.

June 16-18—EASTERN ASSOCIATION OF FIRE CHIEFS. 11th Annual Convention, Baltimore, Md. Secretary, Chief Charles E. Clark, P. O. Box 217, Wayne, Pa.

June 21-22—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. 4th Annual Convention, Boulder, Col. Secretary-Treasurer, Chief Ray Tiller, Waterloo, Ia.

June 22-25—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. 49th Annual Convention, Hudson, N. Y. Secretary, Chief Chris W. Noll, Poughkeepsie, N. Y.

June 29—FAIRFIELD COUNTY FIRE CHIEFS' EMERGENCY PLAN—Regular Meeting, Redding, Conn. Secretary, Captain John Moehring, Toms Road, Stamford, Conn.

August—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 55th Annual Convention, Milford, Conn. (Exact date to be decided later.) Secretary, D. W. Harford, 10 Chestnut St., South Norwalk, Conn.

August—NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. 51st Annual Convention, New Bern, N. C. Secretary, John Miller, Concord, N. C.

August—VERMONT STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Poultney, Vt. (Exact date to be decided later.) Secretary-Treasurer, W. R. Adams, Vergennes, Vt.

Aug. 8-12—PROVINCE OF QUEBEC POLICE AND FIRE CHIEFS' ASSOCIATION. 6th Annual Convention, Sherbrooke, Que. Hon. Secretary-Treasurer, Chief Robert Harrington, Fire Dept., McColl-Frontenac Oil Co., Ltd. Suite 8, Hotel Windsor, Montreal, Que.

Aug. 9-12—VIRGINIA STATE FIREMEN'S ASSOCIATION. 52nd Annual Convention, Luray, Va. Secretary, O. W. Dabney, Staunton, Va.

Aug. 16-19—FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. 66th Annual Convention, Saranac Lake, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.

Aug. 29—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 45th Annual onvention, Salt Lake City, Utah, week of Aug. 29 (Tentati e date.) Secretary, A. J. Baker, Lewiston, Mont.

Sept. 7-8—DELAWARE VOLUNTEER FIREMEN'S ASSOCIATION. 18th Annual Convention, Newark, Del. Secretary, Warren W. Pettyjohn, Dover, Del.

Sept. 15-17—INTERNATIONAL ASSOCIATION OF POLICE AND FIRE SURGEONS. Annual Convention, Atlantic City, N. J. Secretary, Dr. Harry M. Archer, 47 West 85th St., New York City.

Sept. 20-21—IOWA FIREMEN'S ASSOCIATION. 61st Annual Convention, Belle Plaine, Ia. Secretary-Treasurer, Paul A. Soener, Independence, Ia.

Sept. 23-24—NEW JERSEY STATE FIREMEN'S ASSOCIATION and NEW JERSEY STATE FIRE CHIEFS' ASSOCIATION. 61st Annual Convention, Atlantic City, N. J. Secretary, Firemen's Association, Evan F. Benners, 602 Chamber of Commerce Bldg., Newark, N. J., Secretary, Chiefs' Association, Fred A. Trowbridge, Morristown, N. J.

Oct. 4-6—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 59th Annual Convention, Lebanon, Pa. Secretary, Chief Charles E. Clark, P. O. Box 217, Wayne, Pa.

Oct. 18-20—ILLINOIS FIREMEN'S ASSOCIATION. 51st Annual Convention, Père Marquette Hotel, Peoria, Ill. Secretary, Asst. Chief Roy W. Alsip, Champaign, Ill., or Chief Frank Hazzard, Peoria.

Panama Honors Firemen

The Republic of Panama has issued six postage and three air mail stamps to honor the Panama Fire Department. Shown on different denominations of this issue are pictures of Chief Juan A. Guizado, Ricardo Arango, view of the Concordia fire, view of a Knox fire engine, monument to the heroes of the May 5 fire, and others.

Bellingham May Close Station

To meet the sixty-hour work week of city firemen, Bellingham, Wash., is faced with the problem of adding eight additional firemen or as an alternative, to close one fire station. It is said that the employment of additional firemen could only be accomplished through an emergency appropriation. The sixty-hour week was voted early in the fall.

Dear Sir:

Your FIRE ENGINEERING monthly publication is regarded by all members in the FIRE DEPARTMENT as a God sent message to all who look and think, and try to prevent loss of life and property.

Hope we may continue to see and read, as well as learn regarding fire protection and fire prevention from your most helpful suggestions.

A number of your suggestions have been put into practice, and is a great help to all of us, Hope you may continue your good work, as we are never to old to learn.

One After Your Own Heart,

U.S. HEAD FIGHTER OF FIRES

Mare Island, Calif.

Novel Greeting Card Sent by the Mare Island Fire Fighters

REDUCE WATER DAMAGE & INSURANCE RATES,

Shuredry SALVAGE COVERS

100% Protection with Shuredry Salvage Covers

Read what Chief Powell says:

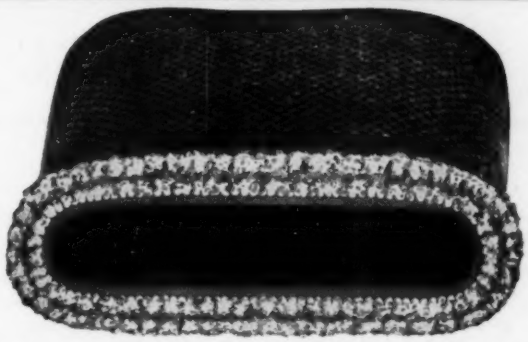
. . . At a recent house fire of 14 rooms where the entire roof was burned off, with a $1,500.00 loss to house, our Shuredry Salvage Covers gave 100% protection to the bedrooms directly under the fire besides to all other furniture in the home. Not one cent was paid for water damage to contents.

No fire department is complete without a good supply of salvage covers, and firemen trained how to use them properly. We can always depend on our Shuredry salvage covers and are only too glad to recommend them.

Yours very truly,

R. A. POWELL, Chief
Pierre Fire Dept.
Pierre, South Dakota

Fulton Bag & Cotton Mills
Manufacturers Since 1870
ATLANTA ST. LOUIS DALLAS
MINNEAPOLIS BROOKLYN NEW ORLEANS KANSAS CITY, KAN.



QUAKER FIRE HOSE

FLAT CURE • SMOOTH LINING

Special construction permits hose to lie flat . . . yet becomes round soon as water passes through. Means longer life . . . more hose on truck . . . easier to pile.

Smooth lining means rapid flow of water.

Be sure and specify QUAKER Fire Hose on your next order.

QUAKER CITY RUBBER CO.
PHILADELPHIA - CHICAGO - NEW YORK - SAN FRANCISCO
New England Distributors
EASTERN FIRE EQUIPMENT COMPANY
PORTLAND, MAINE

Brutal to FIRE

yet harmless to man or materials

Use LUX carbon dioxide extinguishers and keep loss and damage figures at rock bottom.

LUX

Walter Kidde & Company
110 West Street, Bloomfield, N. J.

ELK HART

34 years service in the fire field

•

Prompt service Quality products

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A PARTIAL LIST OF ELKHART PRODUCTS

Shut-Off Nozzles
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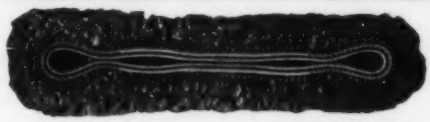
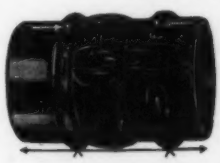
Turret Pipes
Fire Department Extinguishers
Extinguisher Holders
Fire Truck Body Fittings
Hose House Equipment
All Types Hose Couplings
Sliding Poles, Railings and Canopies
Fog Nozzles
Hose Test Pumps
Threading Tools
Coupling Expanders
Pump and Hydrant Valves
Hose Racks and Cabinets
Siamese Connections
Underwriters' Industrial Extinguishers

Send for illustrated folder on the New Elkhart Mystery Nozzle.

ELKHART BRASS MFG. CO.
ELKHART, INDIANA



This is the new LIGHT WEIGHT BI-LATERAL FIRE HOSE



This hose will stand 900 pounds pressure and weighs but 45 pounds to the section uncoupled.

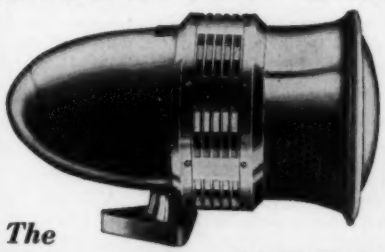
Here's the new DROP-FORGED rocker lug coupling (not cast bronze), with the swivel-protecting feature.

This coupling will stand several expansions and can be used over and over again, saving your city at least 20c to 30c per foot on future hose purchases.

When in the market, let us show you that we can give you the best service obtainable for the least money.

BI-LATERAL FIRE HOSE COMPANY
20 N. Wacker Drive Chicago, Illinois

ATTENTION—*EVERYBODY!*



HEAR *and* SEE IT!

A powerful Siren and Flashing Light combined. Free rolling, sturdy. Guaranteed electrically and mechanically. Write for Bulletin.

The
No. 30 SIRENLITE
The STERLING SIREN FIRE ALARM CO., Inc.
ROCHESTER, N. Y.

FALSE ALARMS

OUTSIDE THE LIMITS

A farmer who came to town, parked his vehicle and then went to the business section to do his trading.

Before trying to cross a street, he heard the warning sound of approaching fire apparatus. He stopped to let it go by. As he then tried to cross the street, he was struck by a motorist, who was chasing the apparatus to the fire.

Indignantly, the farmer got up and rushed into a police station. He was fuming for vengeance.

He shouted to the police officer, "The car that hit me about three minutes ago was number 75,029. I can prove he was exceeding the limit and I want——I want——"

"You want a warrant for his arrest," said the officer.

"No," replied the farmer with hurt feelings. "What good would a warrant do me at the rate he was traveling. I want extradition papers."

Genial Pat explained, "A corset is like an ash cart, because it goes around gathering up the waist."

WELL FORTIFIED

Company smokers were well known for the early hour at which they broke up—early the next morning.

After one of the regular gatherings, one of those who attended was asked by a townsman:

"Did your wife give you particular hell because you came home at four o'clock the following morning?"

"No, sir! She didn't say a word. It's too near Christmas."

People who carry bottles should not sit on stone benches.

EXCUSE REMOVED

A salesman tells the story of an incident that took place at an office where he was waiting to see an executive.

A junior official said to a pretty stenographer, "Are you doing anything on Sunday evening, Miss Dorance?"

"No, not a thing," she answered rather hopefully.

"Then please try to be on time on Monday morning."

Another fellow who lives off the fat of the land is the girdle manufacturer.

HANDICAPPED

In one community, a brick fire station was being erected without WPA labor, strange as it may seem. Each of the workmen was supposed to give an honest day's work and there was the constant fear of dismissal by those not doing satisfactory work.

That is why one bricklayer said to another, "Tom, over there, is going to work himself to death."

"And why is that?"

"Well, Tom is nearsighted."

"What has nearsightedness got with Tom working to death."

"Poor, Tom," said the other with much feeling. "He can't see when the boss isn't looking, so he has to keep on working all the time."

The man who is lucky in love remains single.

'TWAS EVER THUS

In the smoking room at the club, a department officer was at the bar beside a man who appeared to be a successful business man.

Beer induces sociability and soon the officer was talking about life in the department, how each promotion came as the result of hard study. He ended by saying, "I'm a self-made man."

The other looked into his glass rather gloomily. He said:

"You're lucky. I'm the revised work of a wife and three daughters."

NO PROOF

A group of ladies from the Community Center called to discuss with the Chief a campaign for better fire protection in the schools. As they waited at the desk for word from the Chief to come upstairs, they could hear two firemen have a rather heated discussion back of the ladder truck. It was all the more amusing because one fellow was rather plump and theoretically should have been good natured, while the other was of the wiry type.

After the ladies had completed their talk, one told the Chief about the amusing incident of the two firemen quarreling.

One asked:

"Do you believe there is any truth in the theory that big creatures are better natured than small ones?"

The Chief who was known for his dry wit, replied:

"That is certainly true. Look at the difference between the Jersey cow and the Jersey mosquito."

You can lead some men to water, but why disappoint them?

Nothing is more pathetic than a horse fly on an automobile radiator.

SLIGHT INCONVENIENCE

Advised by friends as to her legal status, a genial, fat colored lady brought suit against the driver of a fire apparatus for alleged injury when a ladder struck her, as the apparatus rounded a corner too sharply.

She claimed damages for personal injury and for inability to work to support her family.

She was asked a lot of questions on the witness stand. The lawyer for the defense seemed particularly interested in her little boy, who accompanied her to court, and who peculiarly was redheaded.

"Didn't it ever appear strange to you," he asked, "that the boy should have red hair?"

"Yas sah."

"Is there any one on your side of the family with red hair?"

"No sah."

"Does any one on the other side of the family have red hair?"

"Ah don't think so."

"Has the father of the boy got red hair?"

"Ah don't know sah. He never took his hat off."

—Drawing by Art Esper

"All three mine? Golly, nurse, ain't there been a mistake somewheres."

Ask for it..

It's FREE

As a reader of FIRE ENGINEERING you are entitled to our buyers' information service free of cost. Here is how it works.

Whenever you are seeking information about any piece of equipment or material that you are planning to buy, first look through the advertisements in this issue. They are your best guide.

Then, if you do not find what you want, just use the blank below to tell us what you need and we will see that you get the information you want.

That's all there is to it. Easy, simple, and it costs absolutely nothing.

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Gentlemen:

Please have sent to me, without obligation, information about the following items:

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NAME .....

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NOTE: The more specific you can be in detailing the items you are interested in, the more specific we can be in having the correct information sent you.

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Selected . . .

By the CITY of NEW YORK and the NEW YORK WORLD'S FAIR 1939 CORPORATION!

GOODALL
FIRE HOSE

Purchase and approval by two such critical users of fire hose is unquestionable evidence of GOODALL *quality* and the ability of GOODALL hose to meet the most exacting tests of fire-fighting service.

Every step in the manufacture of GOODALL FIRE HOSE is designed to insure maximum safety, dependability and ultimate economy. There is a size and type for every municipal and industrial use. Let us quote on your requirements.

GOODALL RUBBER CO.
5 SOUTH 36TH STREET
PHILADELPHIA, PA.
New York - Chicago - Pittsburgh - Cleveland - Houston
FACTORY—TRENTON, N. J.

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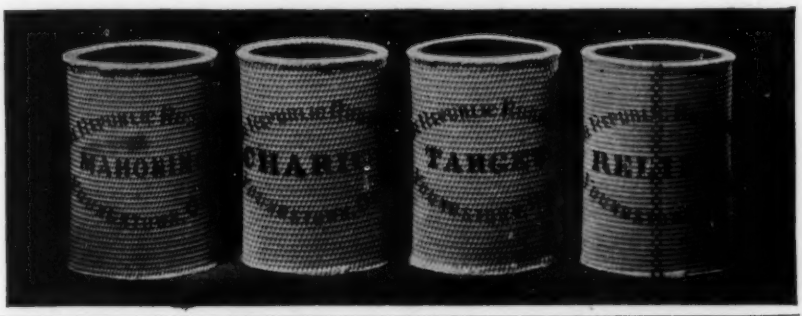

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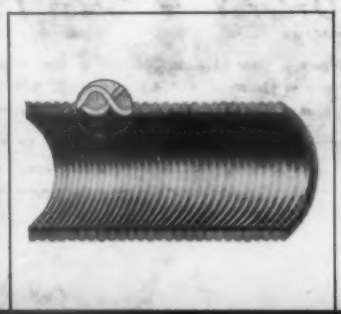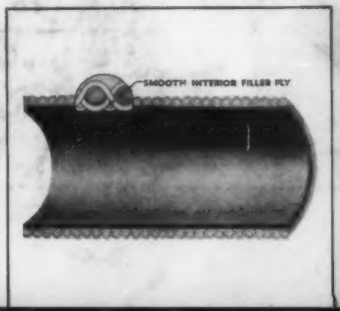
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